30626

National Library of Canada / Bibliothèque nationale du Canada

CANADIAN THESES ON MICROFICHE / THÈSES CANADIENNES SUR MICROFICHE

NAME OF AUTHOR/*NOM DE L'AUTEUR* DIANA MARY BOYLEN

TITLE OF THESIS/*TITRE DE LA THÈSE* FARM LAND TENURE IN ALBERTA: ATTITUDINAL AND SOCIO-ECONOMIC VARIABLES

UNIVERSITY/*UNIVERSITÉ* UNIVERSITY of ALBERTA

DEGREE FOR WHICH THESIS WAS PRESENTED/ *GRADE POUR LEQUEL CETTE THÈSE FUT PRÉSENTÉE* M.A.

YEAR THIS DEGREE CONFERRED/*ANNÉE D'OBTENTION DE CE GRADE* 1976.

NAME OF SUPERVISOR/*NOM DU DIRECTEUR DE THÈSE* R.G. IRONSIDE

Permission is hereby granted to the NATIONAL LIBRARY OF CANADA to microfilm this thesis and to lend or sell copies of the film.

The author reserves other publication rights, and neither the thesis nor extensive extracts from it may be printed or otherwise reproduced without the author's written permission.

L'autorisation est, par la présente, accordée à la BIBLIOTHÈQUE NATIONALE DU CANADA de microfilmer cette thèse et de prêter ou de vendre des exemplaires du film.

L'auteur se réserve les autres droits de publication; ni la thèse ni de longs extraits de celle-ci ne doivent être imprimés ou autrement reproduits sans l'autorisation écrite de l'auteur.

DATED/*DATÉ* 21. 10. 76 SIGNED/*SIGNÉ* Diana M Boylen

PERMANENT ADDRESS/*RÉSIDENCE FIXÉ* 304 - 12411 LANSDOWNE DR.
EDMONTON, ALTA.
T6H 4L4

NL-91 (3-74)

INFORMATION TO USERS

THIS DISSERTATION HAS BEEN
MICROFILMED EXACTLY AS RECEIVED

This copy was produced from a microfiche copy of the original document. The quality of the copy is heavily dependent upon the quality of the original thesis submitted for microfilming. Every effort has been made to ensure the highest quality of reproduction possible.

PLEASE NOTE: Some pages may have indistinct print. Filmed as received.

Canadian Theses Division
Cataloguing Branch
National Library of Canada
Ottawa, Canada K1A ON4

AVIS AUX USAGERS

LA THÈSE A ETE MICROFILMEE
TELLE QUE NOUS L'AVONS RECUE

Cette copie a été faite à partir d'une microfiche du document original. La qualité de la copie dépend grandement de la qualité de la thèse soumise pour le microfilmage. Nous avons tout fait pour assurer une qualité supérieure de reproduction.

NOTA BENE: La qualité d'impression de certaines pages peut laisser à désirer. Microfilmee telle que nous l'avons reçue.

Division des thèses canadiennes
Direction du catalogage
Bibliothèque nationale du Canada
Ottawa, Canada K1A ON4

THE UNIVERSITY OF ALBERTA

FARM LAND TENURE IN ALBERTA: ATTITUDINAL AND SOCIO-ECONOMIC VARIABLES

by

© DIANA MARY BOYLEN

A THESIS

SUBMITTED TO THE FACULTY OF GRADUATE STUDIES AND RESEARCH

IN PARTIAL FULFILMENT OF THE REQUIREMENTS FOR THE DEGREE

OF MASTER OF ARTS

DEPARTMENT ..GEOGRAPHY..

EDMONTON, ALBERTA

FALL, 1976

THE UNIVERSITY OF ALBERTA

FACULTY OF GRADUATE STUDIES AND RESEARCH

The undersigned certify that they have read, and recommend to the Faculty of Graduate Studies and Research, for acceptance, a thesis entitled ....Farm.Land.Tenure.in..... .....Alberta:..Attitudinal.and.Socio-economic..... .....Variables..... submitted by .....Diana.M..Boyle..... in partial fulfilment of the requirements for the degree of Master of .....Arts.....

R. Geoffrey Lucas
Supervisor

Kenneth R. Fairbairn

William L. Phillips

Date ...15..October,.1976.....

ABSTRACT

The institution of land tenure is a concept which involves the many relationships established among people that determine their varying rights to control, occupy and use landed property. This study incorporated the analysis techniques of spatial distribution used in agricultural geography with techniques of socio-economic and attitudinal analysis used in economic and behavioural geography, to investigate these relationships.

The literature of land tenure and property rights was reviewed and major trends in the Alberta land tenure system using census data were established. It was found that part-owner/part-tenant operatorship was increasing both in number and size of acreage operated. Property transfers were predominately by direct purchase and family intergeneration transfer was an increasing problem. This seemed to account for the large proportion of operator and family off-farm employment.

Three sets of hypotheses were developed, based on the land tenure literature and census data review. They were:

A. that the greater the acreage of land owned
   - i) the greater would be the perceived amount of land owned and value of production;
   - ii) the lower would be the perceived value of land (relative to that of persons renting land);
   - iii) the higher would be the age grouping;
   - iv) the lower would be the level of formal education;

B. that high scores on a Likert attitude measurement scale based on affinity to land ownership would correlate

   i) positively with number of acres owned, percentage of land owned in farm investment, age grouping of 45-54, business organization as a private individual; and

   ii) negatively with number of acres rented, amount of off-farm income;

C. that an analysis of attitude towards land ownership using the semantic differential technique could

   i) identify major dimensions of the attitude; and

   ii) would correlate positively with scores obtained using the Likert attitude measurement scales.

Hypotheses Aii and Aiv were valid; however, Ai and Aiii were not. Hypotheses Bi and Bii were valid with the exception of a negative correlation of Likert attitude scale scores and number of acres owned. Hypothesis C could not be tested.

Data for this analysis were obtained from census statistics and a province-wide simple random sample mail questionnaire.

Statistical measures of association as well as the Likert attitude measurement and semantic differential scales were used to investigate socio-economic and attitudinal interrelationships with respect to land ownership. The Likert attitude measurement scale found predictable responses to freedom of ownership, leasing and efficiency statements as well as surprisingly, identifying a predilection for socialistic land ownership philosophy. The semantic differential scale was found unsuitable for use by mail questionnaire.

Analysis of attitude statements as well as questionnaire comments indicated a lack of knowledge as well as understanding of land use and ownership planning mechanisms by farm people. Eradicating ignorance of this issue must become a high priority for government and farm organization extension personnel if land tenure problems are to be avoided in the future.

ACKNOWLEDGEMENTS

I would like to acknowledge the assistance and support that has been generously given to me in the development of this thesis.

Financial assistance and endorsement were provided by the Resource Economics Branch, Alberta Agriculture and the Alberta Land Use Forum, for the production, presentation and analysis of the questionnaire research.

Mrs. Audrey G. McFarlane was responsible for the production of the finished manuscript copy.

Dr. R.G. Ironside and Dr. W.E. Phillips of the University of Alberta, and Mr. G.B.H. Parlby of Alberta Agriculture provided academic counsel and patient encouragement when it was needed.

I would like to thank my family and friends who helped me through the difficult times.

TABLE OF CONTENTS

CHAPTER		PAGE
I.	INTRODUCTION	1
	The Institution of Land Tenure and Property Rights	1
	Property Rights in Land	4
	Types of Interests in Landed Property	7
	Development of Farm Tenure System in Western Canada	10
	Delineation of Present Alberta Land Use and of Tenure Concerns in Western Canada	17
	General Problem Delineation	21
	List of Footnotes	23
II.	REVIEW OF LAND TENURE LITERATURE	29
	General Discussion of Farm Tenure Literature	29
	Economic Analyses of Land Tenure Concerns	32
	i) Farm Size and Scale	32
	ii) Productivity and Efficiency Concepts	34
	iii) Real Property Taxation	38
	iv) Farm Leasing Arrangements and the Rental Market	40
	v) Valuation of Rights in Land	41

CHAPTER PAGE

II. vi) Evaluation of Literature Concerning the Economics of Property Rights 42

Geographical Analyses of Land Tenure Concerns 43

i) Spatial Distributions and Relationships 43

ii) Settlement History and Landscape Analysis 44

iii) Planning and Property Rights 45

Socio-Economic Analyses of Land Tenure Concerns 45

i) Land Tenure Processes and the Beginning Farmer 45

ii) Aspects of Risk and Uncertainty in Agriculture and Land Tenure 46

iii) Agricultural Programme Development Theory 48

Summary 57

List of Footnotes 58

III. REVIEW OF ALBERTA PRIVATE LAND TENURE STATISTICS AND RELATED LITERATURE 64

General Introduction 64

Size and Scale Considerations 65

Socio-Economic Considerations 85

Summary Studies 89

CHAPTER		PAGE
III.	List of Footnotes	93
IV.	PROPERTY RIGHTS AND THEIR RELATION TO BEHAVIOUR AND ATTITUDE THEORY	95
	Introduction	95
	The Concept of Attitude	96
	The Measurement of Attitude and its Relation to Behaviour Prediction	97
	Geographical Use of Attitude Theory	99
	Attitude Measurement Scales: Theory and Methodology	101
	i) Likert Attitude Scales	101
	ii) Semantic Differential	102
	List of Footnotes	104
V.	RESEARCH PROBLEM DEFINITION, PROCEDURES AND ANALYSES	109
	Introduction	109
	General Characteristics and Relationships; Hypotheses with Respect to Farm Land Tenure in Alberta	110
	Research Design	112
	i) Sampling Methodology	112
	ii) Questionnaire Design	115
	Research Design and Analyses	116
	i) Section A: Likert Attitude Measurement Scale	116

CHAPTER

PAGE

V ii) Section B: Semantic Differential 120

iii) Sections C, D, E: Analyses of Socio-Economic Variables 124

List of Footnotes 130

VI. Summary and Conclusions 133

***

SELECTED BIBLIOGRAPHY 137

Land Tenure; Land Reform; General 137

Land Tenure; Legal Aspects 142

Land Tenure; Canada, Alberta 143

Land Tenure; Statistics 147

Land Tenure; United States 148

Land Economics; Farm Size 150

Land Economics; Productivity and Efficiency 151

Land Economics; Property Taxation 152

Land Economics; Farm Leases 153

Land Economics; Land Prices 155

Land Economics; Economics of Property Rights; General 156

Land Tenure; Risk, Uncertainty and Decision-making 157

Attitude and Behaviour; General 158

Attitude and Behaviour; Likert Scaling Technique 160

PAGE

Attitude and Behaviour; Semantic Differential Scales 161

Research Analysis; Statistic and Econometric Methods 162

Research Design; Sampling Methodology; Questionnaire Design 163

APPENDIX I. DISPOSITION OF PUBLIC LAND IN ALBERTA 164

Table 1. Disposition of Public Land Administered by Alberta Energy and Natural Resources 165

Figure 1. Summary of Regulations for Distribution of Public Lands Administered by Alberta Energy and Natural Resources 166

Table 11. Disposition of Public Lands Administered by Alberta Municipal Affairs (Special Areas), 1974 172

Figure 11. Summary of Regulations for Disposition of Public Lands Administered by Alberta Municipal Affairs (Special Areas) 173

APPENDIX II. ALBERTA STATISTICS 175

Table 1. Alberta Farm Population, Numbers and Size, 1921-1971 176

Table 11. Alberta Farm Land Use (1921-1971) 177

Map 1. Soils. Alberta 178

Map 2. Population Distribution 179

PAGE

APPENDIX III. QUESTIONNAIRE 180

Introductory Letter 181

Questionnaire and Summary of Answers 182

Reminder Card 190

Map 3. Province of Alberta. Municipalities and Census Divisions 191

Factor Score Coefficient Matrix 192

VITA 193

LIST OF TABLES

Table	Description	Page
1	Land Ownership in Alberta, 1972	18
2	Characteristics of Farm Size in Alberta by Farm Tenancy Type, 1971	67
3	Tenancy of Alberta Farms, 1921-1971	69
4	Alberta Farmland Acreage Owned and Rented, 1921-1971	74
5	Alberta Farm Tenure by Acreage of Farms and Number of Farms	76
6	Alberta Soil Groups by Farmland Tenure Type, 1971	78
7	Alberta Farm Tenure Type for Number of Farms by Economic Classification of Agricultural Products Sold, 1971	80
8	Farm Organization and Tenure in Alberta, 1971	82
9	Number of Partly and Wholly Owned Farms that carry Mortgages or Agreements for Sale Debt, Alberta, 1971	84
10	Trend of Farm Ownership in Alberta, 1931-1971 . .	86
11	Number of Alberta Farms by Operator's Age and Farm Tenancy Type, 1971	88
12	Number of Alberta Farms by Days of Operator's Part-time Work and Farm Tenancy Type, 1971 . . .	91

Table		Page
13	χ^2 Goodness of Fit Test for Number of Farms; Age Grouping 45-54; Type of Operation: Individual	114
14	Mean and Standard Deviation of Semantic Differential Attitude Scales	122
15	Cramer's *V*: Association Between Acreage (Owned/Rented) with Socio-Economic Variables . . .	128

LIST OF FIGURES

Figure		Page
1.	Plan of a Township in Western Canada	14
2.	Classification of Farm Tenure Literature	30
3.	A Model of Agrarian Structure	50
4.	Types of Agrarian Reform	53
5.	Tenancy of Alberta Farms, 1921-1971	68
6.	Alberta Farmland Acreage Owned and Rented, 1921-1971	73
7.	Alberta Farm Tenure by Acreage of Farms and Number of Farms	75
8.	Alberta Farm Tenure Type for Number of Farms by Economic Classification of Agricultural Products Sold, 1971	79
9.	Percentage of Partly and Wholly Owned Farms that carry Mortgages or Agreements for Sale Debt, Alberta, 1971	83
10.	Number of Alberta Farms by Operator's Age and Farm Tenancy Type, 1971	87
11.	Number of Alberta Farms by Days of Operator's Part-time Work and Farm Tenancy Type, 1971	90
12.	Likert Attitude Statement Scale: Land Ownership	117
13.	Semantic Differential Measurement Scale Mean Scores: Land Ownership	121

LIST OF MAPS

Maps		Page
1.	Number of Alberta Farm Owners, 1971	71
2.	Number of Alberta Farm Part-Owners/ Part-Tenants, 1971	72
3.	Average Total of Likert Attitude Test Scores by County/M.D./I.D.	119

CHAPTER I

INTRODUCTION

> *And the land shall not be sold in perpetuity. For the land is mine, for ye are strangers and sojourners with me. -- Leviticus XXV, 23*

It has been said that Agriculture did not develop until people devised and effected land tenure structures. When rights in regard to land became ordered, recognized and protected by society, people became motivated with the prospect and incentive of harvesting the fruits of his labor and effort.[1]

As there has recently been much public interest in Alberta farmland ownership, this thesis will investigate the definition and nature of these tenure and property rights' structures. Then, the socio-economic and attitudinal characteristics and relationships that affect or are affected by land tenure in Alberta will be determined.

The Institution of Land Tenure and Property Rights

Tenure was and is still a necessary means for producing agricultural products, and for distributing their benefits among producers.

The institution of land tenure has been defined as:

> . . . a concept that involves the many relationships established among men that determine their varying rights to control, occupy, and use landed property. Land tenure concerns all the ways in which people, corporate bodies, and governments share in the bundle of rights.[2]

That bundle or property rights is a complex mass of powers,

claims, responsibilities, and protections, where most of the rights belong to the owner of the land.[3]

However, society reserves four over-riding rights with regard to land:

1) the right to tax,

2) the right of eminent domain,

3) the right to police in interest of society as a whole, and

4) the right of escheat.[4]

In North America, there has been added to these rights, the right to use public funds to influence the use of land resources. Land tenure is also concerned with the time periods during which these rights are held.[5]

Dorner has defined farm tenure as the legal, contractual or simply "understood or customary arrangements" whereby people in agriculture try to arrange for an initial access route to the income flow, and the ways by which these routes are secured.[6] In prairie agriculture, according to Brown and Bens, the

> basic access route to farming income is through an arrangement which provides the productive services of farmland; the security and adequacy of this route are determined in large part by the continued availability of an adequate land base over time.[7]

Thus, the tenure system determines the nature of land ownership or use by individuals as a means of securing access to a farming livelihood. Land tenure institutions also determine the pattern of income distribution in the farm sector.[8]

However, land tenure institutions do not exist in isolation but interrelate with other economic, social, and legal institutions.

These institutions give stability to human relationships by providing security of expectation with respect to accepted procedures of human interaction and response.[9] The systems of rights embraced by these institutions form the basis for the concept of property.

Property rights do not refer to relations between men and things but, rather,

> to the sanctioned behavioural relations among men that arise from the existence of things and pertain to their use. The prevailing system of property rights in the community can be described then, as the set of economic and social relations defining the position of each individual with respect to the utilization of scarce resources.[10]

Property has a number of characteristics. It involves the rights to the use of a material asset, not personal rights or liberties. It consists of the right to use the asset, to change its form and substance, and to transfer all rights in the asset through sale, or some rights through rental. The right of ownership is an exclusive not an absolute right, that is, it is limited by those restrictions that are explicitly stated in law, or by some form of social control such as customs, tradition, codes of ethics, public opinion.[11] Property objects must be capable of appropriation and have a value to the owner in order to give some incentive for the continued maintenance of a property right. The rights of property also imply the assent or sanction of a sovereign power vested with both authority and ability to protect the rights of its subjects.[12]

Barlowe states that society has an inherent interest in all arrangements involving the ownership and use of property because of:

1. the original role society plays in granting, recognizing, and protecting property rights,
2. the economic and social significance of property in our daily lives,
3. the over-all responsibility society has for maximizing social returns both now and in the future. [13]

Thus, it should be possible to show that the content of property rights affect the allocation and use of resources in specific and predictable ways; indeed,

> that a change in the general system of property relations must affect the way people behave, and through this effect on behaviour, property rights assignments affect the allocation of resources, composition of output, distribution of income, et cetera. [14]

Therefore, in order to understand agricultural economic development, it is important to realize that the structure of property rights both determines and is determined by the characteristics of resources and society. [15]

Property Rights in Land

The conception of land as property is deeply entrenched in Western society. Blackstone in the 18th century, asserted that property, along with the security of the person and liberty of the individual, was an "absolute right inherent in every Englishman." [16] As an upholder of the most absolute right of property, he stated that:

> So great, moreover, is the regard of the law for private property, that it will not authorize the good of the whole community. . . In vain, may it be urged, that the good of the individual ought to yield to that of the community; for it would be dangerous to allow

> any private man, or even any public tribunal, to be the judge of this common good, and to decide whether it be expedient or no. Besides the public good is in nothing more essentially interested, than in the protection of every individual's private rights, as modelled by the municipal law. [17]

However, when expounding the classical conception of private property, he stated that a man's property

> . . . consists in the free use, enjoyment, and disposal of all his acquisitions, without any control or diminution, save only by the laws of the land . . . but certainly the modifications under which we at present find it, the method of conserving it in the present owner, and of translating it from man to man, are entirely derived from society; and are some of those civil advantages in exchange for which every individual has resigned a part of his natural liberty. [18]

In fact, he was at a loss as to how to reconcile theory and practice, the classical tradition and the legal concepts, with respect to the rights of property ownership. For he realized that the idea of property as an absolute right unrelated to social duties and social relationships, could not be reconciled with any adequate philosophy for the relationship between the individual and society.[19] Fortunately for his argument, the principal type of private property in his time was agricultural land. The land was visible and was of obvious importance in the economy. The rights, duties and obligations of the landlord with respect to his tenants and of the sovereign power with respect to its subjects could be clearly defined.[20]

During the period of North American settlement, the economic theories of Adam Smith, David Ricardo, John Stuart Mill,

John Locke and others with respect to landed property and free enterprise were most influential.[21] Harris summarizes some of their basic postulates, by noting that:

> Classical economic doctrine assumed that if a private party were given fee simple title to land, he would in pursuing his own best interests automatically fulfil any responsibilities that he might owe to society. Freedom of action without personal responsibility was the basic principle of our (North American) land tenure system. Freedom to make economic decisions, it was reasoned, would assure full utilization of the land; its improvement and conservation would likewise be guaranteed; economic forces would establish optimum-sized farm units; and all these would provide for efficient production which would result in widespread wealth and income. Thus, the landowner's responsibility to society would be fulfilled automatically and attention to a concern over the responsibility of the private owner could be ignored with impunity.[22]

As Lippmann points out, this type of thinking with regard to private property led to flagrant abuse of natural resources in the 19th century; so much so that would-be social reformers came to think that the only alternative was a society without private property,[23] that is, one where an individual's rights could be safe from exclusion by others.[24] However, Soviet experience with collective farms has indicated that intense attachment to the soil as well as emotional satisfaction from land ownership are still necessary factors to be considered in delineating land ownership rights.[25] Thus, it would appear that any satisfactory solution to the resolution of the rights of private property ownership in today's Canadian society will have to include the concepts that:

1. The right of property is guaranteed so long as it is not opposed to the public interest, and cannot be suppressed unless that is necessary in the public interest.

2. The right of property is subordinate to the public interest which must have priority over the private interest. [26]

Types of Interests in Landed Property

The rights and interests that one holds in, ownership, possession or control of property are described as one's estate.[27] Complete or fee simple ownership has the largest bundle of rights. Most owner-operated properties are held in fee simple. The owner-operator has the right to possess and use his land; he can sell, trade, lease, mortgage, subdivide, and devise the property.[28] However, he holds only exclusive not absolute rights to his land, as the state in the interests of society may hold limitations on it, for example, taxation rights.

Other limitations which may affect his rights are easements (rights held by others, for example, utility companies, to use his land for special purposes), deed restrictions, and covenants (private controls, for example, subdivision restriction over future use of the land).[29]

Other common ways of allocating ownership rights occur under fee entailment (owner of each succeeding generation has the right to possess the property but cannot dispose or sell any of it to other than the next heir); life estates (owner can enjoy, possess, and use the property throughout his lifetime); dower rights (right

of wife to one-third of her husband's estate) and homestead rights (where homestead is defined as a portion of the property holding, limited both as to total area and value and which is owned and occupied by families as their home).[30]

Unencumbered owner-operatorship, which has been viewed as the foremost goal of North American land tenure policy, is usually defined as full ownership with no land being rented from others;[31] however, some have stretched that definition to be that the owner's real estate is not encumbered by more than fifteen percent.[32]

Tenants rent from others or work on shares for others, all the land they operate.[33] The rental arrangement usually involves an oral or written contract, known as a lease, in which the landlord conveys his rights of use and possession in a given property, to a tenant for a definite period of time in return for a specified rental payment.[34] Tenants on a cash-lease pay money as rent, for example, $x/hectare (or /acre), for the use of the farm.

Share tenants may pay a share of either crops, livestock, livestock products, or a combination of both. Sometimes part of the rent will be paid in cash. The usual crop-share leases involve either a straight share arrangement or shares on cultivated crops and cash payment for pasture and hay.[35] In an ideal livestock-share lease, the tenant and landlord will share most variable costs, usually according to their share of livestock or livestock products.[36] The tenant may or may not pay a share of the crops.

Croppers are crop-share tenants whose landlords furnish all the work power, that is, work animals, machinery. They usually work

under the supervision of the landlord or his agent and their land is often part of a larger enterprise which is operated as a single unit.[37]

Other types of tenants include those who pay a fixed quantity of any product (payment in kind); those who pay taxes, keep up the land and buildings, or keep the landlord in exchange for use of the land; and those who have the use of the land free. There is also the part-owner/part-tenant who usually owns some land and rents additional land from others. Managers are a distinct group in that they operate farms for others and are paid a wage or salary for their services.

In addition to the types of estates or interests held in land, it is often necessary to classify the property rights into layers of rights-surface, suprasurface and subsurface. The latter two layers of rights are usually separated from the bundle of rights held in land.[38]

Estates held in landed property can be classified also by the number of owners:

1. resources held as the common property of all members of a community or society,
2. properties held as undivided interests by two or more owners,
3. properties held in severalty by single owners. [39]

There may also be conditions for the holding of an estate during its existence as well as for the time of enjoyment of the estate.[40]

Thus, private property in land consists of a bundle of rights of different kinds, which traditionally throughout history have been subject to various limitations. Those limitations or

controls have modified the traditional concept of fee simple ownership. Indeed, that conception is a feature of certain societies at certain states in their development.[41]

From the breakdown of feudalistic ideals of reciprocal rights and obligations to the notion that land was "simply a special kind of mechanism," to the American pioneer's equation of land equals absolute freedom, the institution of private property has evolved and responded to meet social needs.[42]

Development of the Farm Tenure System in Western Canada

England's tenure laws and practices were exported virtually unchanged to her colonies in North America. There, they were changed or discarded as the colonies adapted to a different physical and socio-economic environment. The abundance of land as well as the urgent desire to populate the colonies led to the freest of English tenures. Thus, great emphasis was placed on the development of a new land system wherein the government became a protector rather than a regulator of individual rights.[43]

The American experience in opening up western lands for settlement provided some of the philosophies as well as methods which were used in western Canada. The North American dream of land ownership was probably best expressed by Jefferson in his conception of the family farm. He believed that there was a "causal relationship between farming and the political system of democracy."[44] He believed that America had to establish and preserve an agricultural system of

free-holders -

> full-owner operators debt-free, unrestricted by any contractual obligations to anyone - all in all, pretty much the monarchs of all they survey. 45

Consequently, throughout the 19th century, disposal of the public domain was perhaps the most important factor in the political as well as the economic life of the United States.[46]

During the federalist period, Adams and others, argued for the ordered compact settlement of land by sale as they felt that the public domain should be a source of public benefit through land sales, as well as a source of private property.[47] However, due to the rapid advance of the frontier as immigration increased, as well as the unbridled increase in speculation and questionable business ethics, and in consideration of the large tracts of land that were then held by non-residents, Congress passed the Pre-Emption Act in 1841. This act legalized the "prescriptive" right of squatters to acquire land on which they had settled.[48]

However, the most influential programme of public land policy in the United States was initiated with the turbulent passage of The Homestead Act of 1862. Free entry was permitted to any quarter section which was subject to pre-emption at $1.25/acre ($3.08/hectare) upon payment of a nominal fee of $10.00 (railway lands were under different regulations).[49] Patent was issued only after five years of residence and cultivation, and no homestead could be seized for "any debt or debts contracted prior to the issuing of the patent therefore."[50] This programme did not stop speculation or fraudulent

entry onto land, but, as noted by Hibbard, it was a conspicuous success, for it:

> . . . strengthened democracy. It diffused wealth. It created a 'land-owning, home-owning people' so long as land remained abundant and free. [51]

As a permanent solution to the task of populating the West, it was not a remedy. In many localities, speculation in land and its subsequent effects led to an increase in tenant farming; it was unsuitable for the semi-arid areas west of the hundredth meridian and it was too inflexible to deal with divergent farm practices, for example, irrigation, ranching.[52] However, as Hibbard notes:

> . . . yet with all its shortcomings, the Homestead Act clearly has more to its credit than any other one land act passed by the federal government. A million and a third homesteads have been taken up and carried to completion . . . it was a means of peopling the wilderness . . . [53]

In Canada, on the other hand, the social, economic, and political circumstances which led to the adoption of the free homestead system were quite different from those in the United States. There was no "squatter on a militant frontier"; no labour advocacy of free homesteads; no abolitionism and no Civil War.[54] Competition with the rapid American settlement of the West not only forced the Dominion into premature political expansion to the Pacific, but also into building a transcontinental railway communication system. In 1870, Canada acquired the lands of the Hudson's Bay Company (except for an area equal to one-twentieth of the total area) "for the purposes of Dominion." In the federal parliament, it was

acknowledged that both projects depended upon an effective settlement policy. Without any opposition and almost no debate, the free homestead became a part of Dominion Land policy.[55] The functions of the free homestead were to:

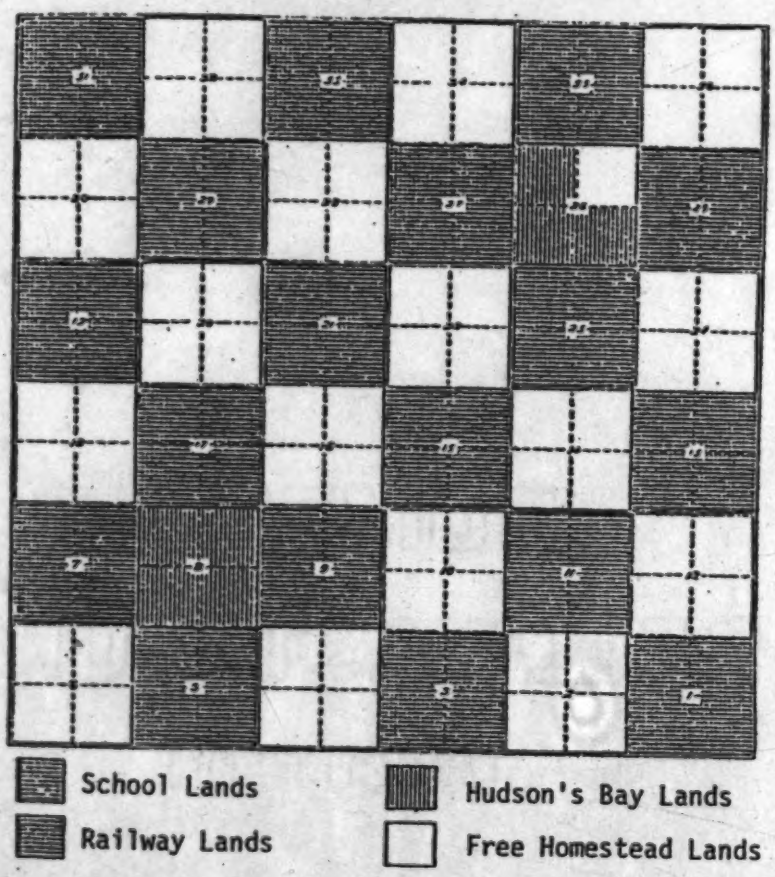
1. rapidly establish a population in Western Canada,
2. increase the value and number of sales of nearby railway and government lands, and
3. provide traffic for the railroad.[56]

Unlike the United States, the surveys and development of land policy were far in advance of most settlements. Under the transfer agreement of 1870, title to river lots under the Hudson's Bay Company was confirmed and continued for various Metis settlements until 1884. Some examples of this settlement pattern can still be seen near St. Albert or Pakan in Alberta, today.[57]

In order to avoid the survey disputes that occurred in the American mid-west, Parliament by Order-in-Council of April 25th, 1871, settled on a fixed grid survey system of longitude and latitude which was broken down into divisions of section, township, and range, for the three prairie provinces. This system simplified land descriptions as it replaced the English system of "metes and bounds" where land descriptions could change if natural phenomena did, and it provided surveyors, anywhere within the grid, with easily obtainable points of reference. The section was fixed at 640 acres as in the United States and the township at 36 sections.[58] A plan of a typical township in Western Canada (See Figure 1) illustrates the divisions into homestead, school, railway and Hudson's Bay lands.

Figure 1

PLAN OF A TOWNSHIP IN WESTERN CANADA



Plan of Township showing: (a) School Lands (Sections 11 and 29), (b) Hudson's Bay Lands (Sections 8 and three-quarters of 26; the whole of 26 in every fifth township), (c) Free Homestead Lands (even-numbered sections, except 8 and 26), (d) Railway Lands (odd-numbered sections reserved for selection as railway land grants). Each section is bounded on three sides by road allowance (66 feet or 20.12 metres).

SOURCE: Martin, C., Dominion Lands Policy, page 18.

The second innovation was the use of the Torrens system of registration of title to land rather than the older system of deed registry of tenure. The salient features, at least in theory, of this system were:

1. that it was a system for registration of title to the land itself rather than a registration of documents;
2. that the state guarantees title and operates the system's machinery; and
3. that because the certificate of title is intended to be complete and accurate, the layman could theoretically carry out the land transactions himself.[59]

Under the Dominion Lands Act of 1872, a settler could homestead on 160 acres (64.75 hectares) of land with a fee of ten dollars and residence requirements of three years only. Subsequent changes in regulations lowered the age limit from twenty-one to eighteen years and granted pre-emption rights to reserve the adjoining quarter section for purchase at the government price upon the issue of patent for the original homestead.[60] However, the homestead policy was more or less nullified until the mid 1890's by the exclusion of homestead land from a land belt twenty miles (32.19 kilometres) wide on each side of the railroad and by the many frequent changes in homesteading regulations. It appeared that a genuine homestead policy was not adhered to by all, as many in parliament still felt that the government was owed so much per acre as an alienation fee.[61] Indeed, the homestead settlement system had never been more than half a system as it was applicable at best to only approximately four-ninths of the

township area.

For Alberta, the total acreage under homestead (patented and unpatented) to 1930, when the lands were transferred from federal to provincial jurisdiction, was 20, 713,847 acres (8 382 603.89 hectares).[62] However, it is estimated that more than 15,880,000 acres (6 426 413.68 hectares) out of a total of 34,650,000 acres (14 022 369.90 hectares) that were entered for homestead from 1905 to 1930 were cancelled - a failure rate of 46 percent.[63]

Many settlers combined pre-emption rights with purchased homesteads on government, railway or Hudson's Bay Company land. Indeed by 1902, Sifton estimated that "fully one-half of the settlers that are actually located on the land in the West are located on purchased lands and have not taken up homesteads at all."[64] As wheat production expanded, and farmers made use of improved machinery and dryland farming techniques, the half section farm tended to displace the quarter section as the viable farm unit.[65] This trend was reinforced by government programmes such as the Volunteer Bounty Act, 1908 and the Soldier Settlement Act, 1917.[66]

With the exception of the settlement programme in the Peace River country of north-western Alberta, the free-homestead system came to a virtual end in western Canada in 1930. In passing, it is important to realize that the homestead programme strengthened not only the North American view of property as a natural or as an absolute right, but it also established the ideal of individual private ownership of land, and the frontier psychology which accompanies it. As Esau noted, "this ideological conception of landholding is still a

part of our social milieu to-day."[67]

Delineation of Present Alberta Land Use and of Tenure Concerns in Western Canada

When the federal government transferred control of Dominion lands to the provinces in western Canada in 1930, a fairly large portion of surveyed lands (15,417,000 acres ((6 239 044.06 hectares)) out of 85,593,253 acres ((34 638 391.18)) or 18 percent) remained undisposed.[68] Wood has noted that the philosophy as well as the administration of these public lands did not change significantly with the years since that time.[69] In 1939, however, Alberta did establish an agricultural leasing policy for its Crown lands with three types of leases: agricultural, cultivation and grazing. The current regulations for these leases as well as an acreage breakdown are included in Appendix 1. From the statistics in Table 1, it can be noted that approximately 64 percent of the land in Alberta is still publicly owned. While many important issues regarding the ownership and management of these lands remain to be solved, this thesis will be concerned with issues pertaining to privately owned farm land - some 30 percent of the land acreage.

Across Canada today, the demand for rural land in the private ownership sector is increasing. The public communication media report that farmers wishing to take advantage of economies of scale are expanding and consolidating their farms; that urban dwellers are developing subdivisions for rural residences as well as using agricultural land for recreation; that energy consortiums are using

Table 1

LAND OWNERSHIP IN ALBERTA, 1972

Ownership Category	Square Miles	Square Kilometres	Percent
Federal Jurisdiction			
National Parks	20,692	53 592.01	8.10
Indian Settlements	2,512	6 506.05	0.98
Military Areas, etc.	2,923	7 570.53	1.14
	26,127	67 668.59	10.22
Provincial Jurisdiction			
Provincial Parks	2,348[1/]	6 081.29	0.91
Wilderness Areas	2,432	6 298.85	0.95
Special Areas	5,600[2/]	14 503.93	2.19
Metis Colonies	2,012	5 211.05	0.78
Forest Land	106,754	276 491.47	41.81
Swamp, Rock Muskeg and Water	19,259	49 880.56	7.54
	138,405	413 067.15	54.18
Privately Owned	88,400[3/, 4/]	228 954.85	34.62
Miscellaneous			
Roads and Highways	1,783	4 617.95	0.69
Cities and Towns	570	1 476.29	0.22
	2,353	6 094.24	0.91
Total Area	255,285	661 184.83	100.00

SOURCE: C. Pei, A Look at Rural Land Ownership in Alberta, 1974.

1/ Includes Willmore Wilderness Park and Historical Sites.

2/ 75 percent of the total Special Areas.

3/ 25 percent of the Special Areas is included.

4/ Farmland accounts for 77,354 square miles (200 345.85 square kilometres) or 30.3 percent of the total area.

more land for oil and gas well sites, surficial mining operations; and that in western Canada particularly, the question of speculation by foreign owners has been raised.[70] With the exception of historical land settlement studies, very little academic research has been done on land tenure in Canada. The economic, socio-economic and geographic studies which have been done both in Europe and in North America will be reviewed in Chapter II.

Nevertheless, in answer to public clamour on these issues, provincial governments in Saskatchewan and British Columbia have recently enacted legislation to preserve farm land and thus, to encourage the establishment and maintenance of family farms.

In 1972, the Saskatchewan Land Bank Act was passed with the objectives to provide assistance:

> a) to residents of Saskatchewan to enable them to establish or maintain family farms in Saskatchewan by increasing the opportunities for them to acquire land for farming; and
> b) to increase the opportunities for owners of farm land in Saskatchewan to dispose of their farm land at fair and just prices.[71]

The specific functions of the Land Bank Commission are to:

1. purchase farms outright from those who wish to retire from farming for age, health or financial reasons,

2. purchase with a lease-back option, all or part of the land of persons who wish to continue to farm but wish to reduce their debt or free capital for other purposes,

3. lease land to those with farming experience who wish to start farming,

4. lease land to those who require additional land for a viable farm unit,

5. transfer the family farm from generation to generation,

6. provide counselling and management assistance to those renting land,

7. provide loans to farmers leasing Land Bank land for improvements on the land. [72]

To date, there is no published analysis of this programme.

In Manitoba, since 1973, a land lease programme of the Manitoba Agricultural Credit Corporation has operated in a similar way, but there is no published analysis of its effect(s), to date.

In 1973, the government of British Columbia passed the Land Commission Act which established a provincial Land Commission to "set up and control reserves of agricultural land, green belt land, land bank land, and park land." In addition, to preserving agricultural land, the Land Commission is to "encourage the establishment and maintenance of family farms."[73] A preliminary analysis indicates that the development of farm land into non-farm uses has been slowed by the more inclusive control of zoning by provincial government agencies. The anticipated effects are that farm land will be preserved and that some reduction in farm land values may occur.[74]

With regard to the subject of foreign ownership, it is estimated in Saskatchewan and Alberta that at the most, approximately 2 percent of the rural land is held by aliens.[75] This figure is based on random sample data collected both in Saskatchewan and Alberta. The reports concluded that the general concern is really one of ownership of recreational and residential property rather than agricultural property.[76]

In 1973, pressure from farm organizations concerned with rising land values, communal property rights, and the availability of agricultural land forced the Alberta government to establish a Land Use Forum to consider various aspects of land use in Alberta. Specific subjects to be included were the following:

1. the family farm;
2. multi-use of agricultural land;
3. the use of agricultural land for recreational purposes;
4. land use in and adjacent to urban areas as it affects the cost of housing;
5. future land needs of Alberta agriculture;
6. corporate farms, foreign ownership of land, absentee ownership and communal farming;
7. the common ownership of land, agricultural processing and marketing facilities;
8. land use as it influences population distribution in Alberta;
9. the extent, if any, to which the historical right of a land owner to determine the use and disposition of agricultural property ought to be restricted. [77]

Their report and recommendations for any necessary legislation were presented in early 1976. At that time, they concluded that there were:

> no problems with landlords and tenants that seriously affect the use of agricultural land. On the contrary, the leasing process provides another mechanism for farm size adjustment. Land available for lease also presents an opportunity for new entrants with limited capital to get started in farming. [78]

These conclusions on land tenure are now being reviewed and debated by farmers and government departments.

General Problem Delineation

In our Western society, the ownership of land is a long-standing and cherished social institution. Further, both the physical form of the property as well as the concept of home ownership have contri-

buted to the philosophy of the family farm. However, as populations increase and technologies become more complicated, social institutions must evolve and respond to changing societal needs. These changes will have a complex impact on the economic and political institutions associated with farm land tenure.

Therefore, it is proposed that this thesis will:

1. identify the main social and economic characteristics and relationships which have been found to affect or be affected by farm land tenure;
2. examine these characteristics and relationships with respect to the rural population of Alberta;
3. investigate the attitudes of Alberta farmers towards present farm land tenure attributes; and
4. determine the land tenure factors which influence the ability of the Alberta family farm to adjust or adapt to changing agricultural conditions.

List of Footnotes: Chapter 1 - Introduction

1 John F. Timmons, "Tenure and Size" in Size, Structure and Future of Farms, edited by A. Gordon Ball and Earl O. Heady (Ames, Iowa: Iowa State University Press, 1972), pages 232-233.

2 Raleigh Barlowe, Land Resource Economics (2nd edition) Englewood Cliffs, New Jersey: Prentice-Hall, Incorporated, 1972, page 43.

3 Royal Commission on Agriculture and Rural Life. Report Number 5. Land Tenure: Rights and Responsibilities in Land Use in Saskatchewan (Regina, Saskatchewan: Queen's Printer, 1955), page 1.

4 Eminent domain is defined in law as the right of the government to take private property for public use. The owner must be paid for the property taken.

Escheat is defined in law as the reverting of the ownership of property to the state (or to the lord of the manor) when there are no legal heirs.
From W.S. Avis, ed. Dictionary of Canadian English (Toronto: W.G. Gage Limited, 1966).

5 Peter Dorner, "Land Tenure Income Distribution and Productivity Interactions", Land Economics, XL, 3 (August, 1964), page 249.

6 Ibid.

7 Jacob A. Brown and Robert J. Bens, Farm Tenure in Saskatchewan (Saskatoon, Saskatchewan: University of Saskatchewan, Department of Agricultural Economics, A.R.D.A. Project Number 27072, 1971), page 1.

8 Peter Dorner, "Land Tenure Institutions", in Institutions in Agricultural Development, edited by Melvin G. Blase (Ames, Iowa: Iowa State University Press, 1971), page 14.

9 Ibid.

10 Eirik G. Furubotn and Svetozar Pejovich, "Property Rights and Economic Theory: A Survey of Recent Literature", Journal of Economic Literature, 10, 1972, 1137-1162.

11 Barlowe, Land Resource Economics, page 391.

12 Ibid., pages 376-377.

13 Ibid., page 391.

14 Furubotn and Pejovich, "Property Rights and Economic Theory", page 1139.

15 Kenneth W. Clarkson, "Property Rights, Incentives, and Economic Development", Growth and Change, VI, 2 (April, 1975), page 26.

16 Sir William Blackstone, Commentaries on the Laws of England (Oxford: Oceana Publications, 1966).

17 Ibid.

18 Ibid.

19 R.W.G. Bryant, Land: Private Property and Public Control (Montreal: Harvest House, 1972), page 138.

20 Ibid.

21 See 1) Adam Smith, An Inquiry into the Nature and Causes of the Wealth of Nations, edited by Edwin Cannan (New York: Modern Library, 1937).

2) David Ricardo, The Principles of Political Economy and Taxation, (London: J.M. Dent, 1957).

3) John Stuart Mill, Principles of Political Economy, edited by W.J. Ashley (London: Longmans Green, 1909).

4) on Locke, John M. Brewster, "The Relevance of the Jeffersonian Dream of Today" edited by J.P. Madden and D.E. Brewster, A Philosopher Among Economists. (Philadelphia: J.T. Murphy Company, 1970) pages 175-208.

22 Marshall Harris, Origins of the Land Tenure System in the United States (Ames: Iowa State College Press), page 15.

23 Bryant, Land: Private Property and Public Control, page 140.

24 Clarkson, "Property Rights", page 23.

25 Bryant, Land, page 145.

26 Ibid., page 147.

27 Barlowe, Land Resource Economics, page 382.

28 Devise is defined in law as the giving or leaving of land, buildings by a will. From W.S. Avis, ed. Dictionary of Canadian English (Toronto: W.G. Gage Limited, 1966).

29 Ibid., pages 382-385.

30 Ibid., page 385.

31 Alvin L. Bertrand and Floyd L. Corty, Rural Land Tenure in the United States (Baton Rouge: Louisiana State University Press, 1962), page 108.

32 Howard W. Ottoson, "The Application of Efficiency to Farm Tenure Arrangements", Journal of Farm Economics, 37 (1955), page 1342.

33 Bertrand and Corty, Rural Land Tenure, page 108.

34 Barlowe, Land Resource Economics, page 453.

35 Ottoson, "Application of Efficiency to Farm Tenure Arrangements".

36 Ibid.

37 Ibid.

38 Barlowe, Land Resource Economics, page 387.

39 Ibid.

40 Ibid., pages 388-390.

41 Bryant, Land, page 349.

42 Ibid.

43 Alvin A.J. Esau, Land Ownership Rights, Law and Land: An Overview, (Edmonton: Alberta Land Use Forum, 1974), page 23.

44 John M. Brewster, "Relevance of the Jeffersonian Dream Today".

45 Ibid.

46 M. Clawson, The Land System in the United States, (Lincoln: University of Nebraska Press, 1968).

47 Chester Martin, "Dominion Lands" Policy, edited by Lewis H. Thomas (Toronto: McClelland and Steward Limited, 1973), page 118.

48 Aaron M. Sokolski, Land Tenure and Land Taxation in America, (New York: Robert Schalkenback Foundation, 1957), page 130.

49 One quarter section is defined as 160 acres or 64.75 hectares.

50 Martin, "Dominion Lands" Policy, page 124.

51 Ibid., page 125.

52 Ibid.

53 Ibid.

54 Martin, "Dominion Lands" Policy, page 127.

55 Ibid., page 140.

56 Ibid., page 143.

57 Ibid., page 19.

R.G. Ironside and E. Tomasky, "Development of Victoria Settlement", Alberta Historical Review, 19, 2 (Spring, 1971), pages 20-29.

58 Martin, "Dominion Lands" Policy, page 17.

640 acres = 259 hectares
36 sections = 9 324 hectares

59 I.L. Head, "The Torrens System in Alberta: A Dream in Operation", 35 Canadian Bar Review 1, 1957.

60 Martin, "Dominion Lands" Policy, pages 141-142.

61 Vernon C. Fowke, Canadian Agricultural Policy, The Historical Pattern (Toronto: University of Toronto Press, 1946), page 179.

62 Martin, "Dominion Lands" Policy, page 170.

63 Ibid., page 171.

64 Ibid., page 172.

65 Ibid., page 145.

66 Ibid., page 166.

67 Esau, Land Ownership Rights, page 26.

68 Martin, "Dominion Lands" Policy, page 227.

69 V.A. Wood, "Public Land Policy for Alberta". Unpublished Ph.D thesis, University of Minnesota, 1953.

R.C. Scace, "The Development and Use of Public Land in Alberta", in J.G. Nelson et al, Canadian Land Use in Perspective. (Ottawa: Social Science Research Council, 1973), page 47.

70 One of the better examples is:
Country Guide, January, 1975. "Farm Land: The Race to Protect this Threatened National Resource".

71 Province of Saskatchewan, Legislative Assembly, May, 1972, The Land Bank Act, page 2, section 3.

72 Saskatchewan Land Bank Commission, The Saskatchewan Land Bank, 1973.

73 Province of British Columbia, Legislative Assembly, Spring, 1973, The Land Commission Act.

74 Peter L. Arcus, "New Directions in Land Use Control in British Columbia", Canadian Journal of Agricultural Economics, 22, 1 (February, 1974), pages 77-79.

75 J.A. Brown, A Study of the Purchases and Ownership of Saskatchewan Farm Land by Citizens and Companies of the United States. (Saskatoon, Saskatchewan: University of Saskatchewan, 1972), page 3.

Charles C.M. Pei, A Look at Rural Land Ownership in Alberta, (Edmonton: Alberta Land Use Forum, 1974), Technical Report Number 6, page 27.

76 Ibid.

77 Hansard, Province of Alberta, March 12th, 1973, pages 18-749.
Hansard, Province of Alberta, March 14th, 1973, pages 20-833.

78 Alberta Land Use Forum, Conclusions and Recommendations on Land Use, (Edmonton: Alberta Land Use Forum, 1976), page 173.

CHAPTER II

REVIEW OF LAND TENURE LITERATURE

General Discussion of Farm Tenure Literature

All farm tenure literature has been classified by Tharp into five fairly distinct groups: tenure ideology, situation and trends, economic analysis, policy recommendations and reform promotion,[1] which are summarized by their main characteristics in Figure 2. This summary is still fairly accurate more than twenty years later. Few socio-economic models have been developed or further refined to analyze the effects of land tenure on the processes of agrarian reform (two models are those of Heady and Tuma).[2] Many discussions of the social and economic effects of land tenure on agricultural development are still based on the factual presentation of general census statistics (for example, Timmons, Stutt, Szabo).[3] These studies are descriptive and tend towards problem definition only. Policy and reform recommendations are discussed in terms of broad economic and social concepts (for example, the work of Furubotn or Dorner)[4], or on the basis of highly subjective and emotional views, as can be found in the public communication media.

Salter also summarized land tenure research into two groups - historical and methodological. In the historical type of research, emphasis was placed on the distribution and holding of rights on land through time either by conceptual reasoning and informal first-hand

Figure 2

CLASSIFICATION OF FARM TENURE LITERATURE

I Tenure Ideology	II Situation and Trends	III Economic Analysis	IV Policy Recommendations	V Promotion of Reforms
		SOME DISTINGUISHING CHARACTERISTICS		
Description of historical developments	Statistical counts of mass data	Problem approach	Legislation	Changes in tenure system
Concepts of equality and freedom	Graphic Summaries	Critical examination of concepts	Changes in contractual relationships	Deals only with broad concepts and ideals—few details
The "family farm"	Census tabulations	Appraisal of basic influences and effects	Changes in personal and institutional relationships	Condemnation of "evils"
Tenure goals	Tenure area delineations	Analysis of alternatives in terms of efficiency and labor productivity	Tenure improvement programs	Stewardship in the land
	Trends			Things "ought to be" because they are "right"
	Case studies	Examination and appraisal of various means for attaining given ends	Value judgments often not supported by facts	
	Legal aspects			
	Social status			
Largely subjective	Factual and objective Problem defining	Analytical and objective Resolving of problems	Largely subjective	Largely based on emotion
	Some analysis appraisal but largely descriptive	Problem solving		

SOURCE: M. M. Tharp, "A Reappraisal of Farm Tenure Research". Land Economics 24 (November, 1948), page 320.

information (for example, the work of Ely or Gray) or by analysis of survey data using gross quantitative comparisons between groups of farms (for example, Warren or Black). He noted that the development of research from this point of view showed a close relationship between the investigational work and pressures from the current social problems of the day.[5]

Research of a methodological nature consisted predominantly of descriptions of lease forms, republication of census data or descriptions of standard categories of farms described with respect to averages or distributions for various items.[6] Salter made an exhaustive review of this type of literature which had dominated research up to 1948. In concluding his studies, he noted that there was a lack of formulated problems or hypotheses as well as any evidence that specified practices resulted in specified consequences.[7] Unfortunately, there has been little change in the literature since that time.

Brown and Bens stated in their report on farm tenure in Saskatchewan that:

> a basic objective of the modern farm tenure system should be to provide farm families with reasonably secure and adequate net incomes from a farming livelihood . . . Other important and related objectives were to make farm expansion alternatives available to viable farm units, and to help overcome impediments to efficient use of resources. [8]

With this goal in mind, the basic philosophical concepts associated with land tenure and property rights in North America, as well as the development of the land tenure system in Western Canada

were reviewed. This chapter will now briefly investigate the economic, geographic, and socio-economic studies of various aspects concerning the North American land tenure system which have been done. (Unless specifically identified, all studies have taken place in the United States.) A model of agrarian reform based on land tenure change will also be reviewed. In Chapter 3, studies involving statistical data compilation and analysis in Western Canada as well as an analysis of relevant Alberta land tenure statistics will be presented.

Economic Analyses of Land Tenure Concerns

The major areas of economic research investigation in land tenure are concerned with farm size and scale, efficiency and productivity, real property taxation, farm leasing arrangements and the rental market, and the valuation of property rights in land.

i) Farm Size and Scale:

Current economic and social conditions as well as anticipated changes determine the size and scale of farm enterprises. Farmers have imperfect knowledge; their expectations are not always correct and there are usually time lags and discontinuities in their farm size and enterprise adjustments. Timmons has noted that these time lags are common to all institutional changes, but especially to the land tenure system which has a tendency to lag behind dynamic changes in agriculture because of the customs and laws which form it.[9]

Ball and Heady have stated that the optimum size for an economic unit varies as the objectives of the land tenure system

which in North America are assumed to be

1. maximization of income to the farmer,
2. the production of foodstuffs to be mainly or exclusively from family farms, and
3. the minimization of consumer food costs through production efficiency.[10]

Thus, the major change in the past two decades, which has affected farm size and scale of production has been the shift from the farmer deriving most of his profit income from his farm products to the sharing with suppliers of his off-farm inputs and also with the handlers and processors of his products.[11] As farm efficiency increased and new developments in technology occurred, farmers used more off-farm inputs and left the product handling to others. Thus, profit margins narrowed and more output was required to improve income; the farm production unit needed to be increased in size and scale.[12] This has resulted in a gradual shift from the single proprietorship type of business to a partnership, co-operative or corporate farm, as Heady found that the opportunities for acquisition of credit, profits, equal tax benefits, legal protection and intergovernmental continuity are generally better for all sizes and incomes under a corporate form of business than that of the family farm.[13] This movement to a corporate structure is further encouraged by specialization, high credit and capital requirements, tax disparities, and inequalities in profit opportunities.[14]

Changes have occurred not only in acreages per farm and total number of farms, but also in other dimensions of size, such as

capital invested, credit used, labour employed, inputs, product sales, and the age and competence of farm operators.[15]

However, Timmons has found that measures of farm size which are most influenced by the land tenure system are labour requirements, operating outlays, land value, value of production per farm, and acreages of farms.[16]

ii) Productivity and Efficiency Concepts:

Tenure arrangements will obstruct efficiency if they do not encourage enlargement of farms to meet technological changes, do not give security of tenure that will lead to adoption of effective long-range farm plans and improved farming practices; and do not give a fair division of costs and returns between the individuals involved.[17]

Heady, in one study, developed cost functions for each type of tenure and found that the optimal farm size as viewed by the share-tenant will usually result in an output level different from that at which profit is maximized for the owner-operator, even though theoretically the optimal farm size and use of inputs is the same for all individually operated farms.[18]

Tenure has been found to affect farm productivity. Productivity will not be as high as it could be if there is insecurity of expectations due to lack of land title or a written lease; if the rewards are not commensurate with effort, that is, if the variable costs are not shared in the same proportion as output is shared; if no resources such as credit, markets or related resources are freely available; and if social institutions are not based on land productivity.[19]

In one study by Heady and Kehrberg, it was found that both share and cash tenants had identical production practices. It was concluded that common farming production practices in the area were a greater factor in deciding what production practices to use than the type of lease. However, it was also found that tenants tended to switch from a share to a cash lease when they had sufficient funds to withstand the greater risks associated with cash rents.[20]

In another study, the differences in improvement expenditures by tenure type were investigated. Over a five year period, Barkley and Pine found that for certain types of expenditures (particularly long-term) owner-operators tended to spend more than tenants. However, they also found that operators with leases of less than three years duration were on farms where more expenditures on improvements had been made, than on farms where the operator had a five year lease. In addition, they also reported that there was no significant relationship between a provision guaranteeing the operator the right to compensation for the unexhausted portion of durable inputs and the amount of expenditure made on improvements.[21] These findings have contradicted common assumptions of the research literature.

In another study, an attempt was made to isolate the effects of tenure arrangements on resource use within firms. Hurlburt found that land was the limiting factor. Not only did the marginal returns exceed the marginal cost of the land for the three types of tenure (owner-operator, part-owner/part-tenant, tenant), but the difference between the marginal returns and costs was greater for owner-operated

farms than for those operated by a tenant. In the same study, a comparison of the average productivity of all farm inputs based on a returns/expense ratio showed that owner-operators had lower ratios than tenants.[22]

In terms of efficiency, different farm tenure arrangements have certain attributes. Theoretically, the owner-operator has the most freedom for decision-making and the most security of the tenure forms. Definite goals and long range planning are more likely to occur. However, Barlowe has claimed that the high capital costs of land make land ownership difficult and property ownership usually represents the end product of a "dynamic process" of farmstead growth.[23] In addition, the mortgaged owner-operator, is limited by his creditors in the way in which risk and uncertainty are shared. His security may be threatened by repayment provisions which do not take into account natural hazards, et cetera.[24]

Of all the leasing arrangements, Ottoson has found that the cash-lease has the highest degree of managerial freedom; however, the fixed cash payment, like the mortgage payment, does lead to uncertainty with respect to ability to pay on time. On the other hand, the presence of liquid assets when money does not have to be put into land, allows the cash-lease tenant to take advantage of opportunities such as new cash crops which have quick returns; thus, allowing a more efficient use of resources.[25]

Ideally, the crop-share tenant and landlord should share the proportion of uncertainty relative to their share of the crops. Otherwise, uncertainty will lead to an inhibition of intensive resource use. Miller found that the tenant tends to hold back inputs in cases where only the production output is shared with the landlord, with the result that he uses more land than owners or cash tenants.[26]

Under a livestock lease, tenant and landlord almost always share most of the variable costs, usually according to their share of the products. Under this system, tenant and landlord tend to combine their resources, that is, if the landlord is in dairy, the tenant may be in feed production; thus, the landlord is more heavily involved in decision-making.[27]

In another study, Timmons concluded that part-owner/part-tenants, managers and livestock-share tenants seem to have the capacity to change to larger farm sizes and thence, to greater productivity, while owner-operators, cash and share-tenants do not.[28]

Miller, at the end of one study listed other considerations which he felt would affect the efficiency of farm operation:

1. the inefficient use of resources when tenants constantly move from one farm to another;
2. the relationship between soil productivity and landlord especially under part-ownership, that is, does the owner's land receive a greater intensity of resource use;
3. resultant conflicts between goals of society versus those of the farmer with respect to soil depletion;

4. the life cycle of the operator as the acreage of land, the labour supply, and production vary with the age of the operator.[29]

Johnson claims that the economic efficiency of land tenure systems could also be appraised by investigating the definition of legal and tenure certainty, of rights, internalization of costs and benefits, and of freedom, as well as the legal enforceability of contracts.[30]

iii) Real Property Taxation:

Almost all land is held, even under a system of fee simple ownership, with the obligation to support the government under whose jurisdiction the ownership is enjoyed. Taxation has two basic functions:

1. the diversion of resources from individual control to group or government control in order to attain ends that can be accomplished more effectively by concerted action rather than by the sum of individual action, (this leads to arguments about the rights of individual and of society) and
2. the encouragement or discouragement of the consumption of goods or the utilization of resources in certain uses.[31]

The principal types of taxes which affect landed property are property, special assessments, capital gains, inheritance and

gift taxes, documentary taxes and severance taxes on forest and mineral products.[32] However, almost all research in this area consists either of data summaries showing inequalities in areal assessments as well as in individual properties or of inadequate analyses of the amounts and character of tax delinquency.[33]

With particular reference to tenure goals, Barlowe has stated that when taxes are uniform and equitable, and related to the taxpayer's ability to pay or to benefits that he receives, they often encourage capital accumulation, high levels of living, and a wide distribution of ownership rights. Further, special taxes can be created for different classes of owners, for example, religious organizations. Taxes related to tenure can be used for land reform purposes, such as breaking up of large farms into smaller units.[34] High land taxes during time periods of economic depression can result in substantial areas of tax delinquent land shifting from private to public ownership, for example, the Special Areas in south-eastern Alberta.

At the present time in Alberta, inheritance taxes do not apply to property in land. However, the roll-over provision for farmland transferred within the farm family which is not considered a capital gain for tax purposes, is expected by Anderson to promote both:

1. the consolidation of a "landed aristocracy" within the commercial farm community, and
2. the more extensive use of land to facilitate the transfer

of wealth between generations.[35]

Property taxes could also be used to direct land use by:

1. providing revenues for land-oriented development projects, and
2. serving as a regulatory tool to foster more intensive land use; to promote conservation and environmental goals; to attain particular tenure goals; to influence investment decisions and to enhance property values.[36]

iv) Farm Leasing Arrangements and the Rental Market:

Levels of tenancy and land productivity have been found to be directly correlated.[37] It was found in the United States that more than half of the total agricultural output came from farms dependent entirely or in part upon rented land. Indeed, in Europe, many problems in resource productivity have been associated with fee simple ownership.[38]

The ideal leasing arrangement would be one in which the ownership and use of resources (for example, land and buildings) are separated in such a way that the efficiency of resource use is not impaired but is improved. However, most rental terms are based on customs of the immediate community and are relatively inflexible. This has led in many cases, to a set of dissociations of costs and returns between individuals and points in time that create incentives for the operator to conduct his farming enterprises at less then optimum levels.

Some documented examples of these dissociations are:

1. where the sharing of returns from investments made by one party to the contract are such that the investor receives only a part of the return to the resource and therefore, restricts its use;
2. where the tenant is unable, because of short leases and the operation of the rental market, to realize the benefits of investments in which the costs and returns are dissociated in time;
3. where there is a low correlation between the charges for land use and the earnings of land, such that the operator may be required to hold part of his resources in a low yielding but readily convertible use.[39]

v) Valuation of Rights in Land:

The problems of land valuation center on establishing a price for transactions such as transferring ownership, mortgaging, leasing, or taxation. Unless the price determined, is in keeping with the property's marginal value productivity, there will be incentives for an uneconomic substitution of factors which leads to a less efficient use of resources.[40]

Thus, efficiency as well as productivity is needed in pricing land in order to have stability of occupancy and income. It has been found that pricing land with respect to its productivity will also contribute to stability of occupancy and income.[41] Any rapid change in the movement of land prices will have both intermediate and

long-term effects on tenure status.[42]

vi) Evaluation of Literature concerning the Economics of Property Rights:

While there is no doubt that an accurate statistical data base is needed for problem definition, it is evident from the preceding discussion that little research oriented towards problem-solving in specific land tenure subject areas and using an appropriate data base, has been done.

The study of land tenure as a discipline has traditionally been confronted with questions about the way people "ought" to behave in relation to property.[43] Property rights, as an instrument of society, have derived their significance from the fact that they help a person form those expectations which he can reasonably hold in his dealings with others.[44] Demsetz, Cheung and others have developed an approach to property rights based on its functions. Thus, they define the primary function of property rights as that of guiding economic or social incentives to achieve a greater internalization of the property's externalities.[45] If this is the main allocative function of property rights, then definitions or changes in property rights can best be studied by analyzing their association with the development of new or different beneficial or harmful effects.[46] With this approach to the subject, a literature has developed in the last few years with the following behavioural-economic features:

1. Maximizing behaviour is accepted as the norm; each decision-maker is assumed to be motivated by self-interest and to move efficiently to the most

preferred operating position available;

2. the institutional environment (for example - existing property relations, costs of contractual activities) in which economic activity takes place is precisely specified;

3. most problems are discussed in terms of economic efficiency or of conditions in which markets could be developed;

4. concern is shown for the individualistic basis of choice; the preferences or values of an individual are assumed to be revealed only through his market or political behaviour.[47]

While holding great promise in a conceptual breakthrough, at the present time, this literature has not progressed much beyond the development of theory.

Geographical Analyses of Land Tenure Concerns

Due to the diverse nature of the geographic discipline, it is difficult to precisely categorize research into this area. Many of the economic and socio-economic studies mentioned in this chapter fall within the man-land tradition in geography although they have not been written by geographers per se. This section will outline the few land tenure studies by geographers or those published in geographical journals.

i) Spatial Distributions and Relationships:

Salter has made an exhaustive review of the land tenure literature to 1948, which had a spatial or "geographic" orientation.[48] The basic aim of this research was to delimit and describe "type of

tenancy" areas with a view to reducing landlord-tenant problem analysis to an area basis.[49] Data describing the distribution of selected characteristics were mapped and then, areas of greater/lesser density of those characteristics were delineated. The chief factors used were: percentage of tenancy, kinship between tenant and landlord, kinds and amounts of rents paid, value of farms.[50]

Salter noted that most of these studies lacked any initial problem formulation; did not conclude with any problem formulation; and indeed, in their mapping exercises, found that "the variations in tenure characteristics and methods of renting between individual farms are apt to be more pronounced than are the distinguishing characteristics of the areas as a whole."[51] Perhaps for this reason, few geographers have recently followed this methodology.[52]

ii) Settlement History and Landscape Analysis:

Two schools of geographical thought which have been closely connected in the study of land tenure are that of settlement history and landscape. Work by Broek, Hart, Lowenthal, Johnson, Weir, all include an agricultural settlement history of the particular area, a physical description of the area through time and a discussion of some current phenomena, either physical (for example, Hart, on field patterns) or socio-economic (Lowenthal, on common property rights).[53] While an accurate and detailed knowledge of the area to be studied is necessary for problem assessment, most of these types of studies can be faulted in that no problem definition or formulation is developed

from their findings.

iii) Planning and Property Rights:

Geographers, such as Bryant, Denman, Kollmorgen, who have been interested in land use planning and the resulting changes in legal institutions, have analyzed both changes in the physical landscape as well as those in social and economic interactions.[54] Unfortunately, many of the examples are unique in time and in place, and the resulting analysis tends to be descriptive only, with little applicability to problems elsewhere.

Socio-Economic Analyses of Land Tenure Concerns

Most of the studies in this general area have been done from the sociological point of view, and again, are involved in data collection and problem definition only. The following summaries of areas of socio-economic-political research are mainly philosophical exploration.

i) Land Tenure Processes and the Beginning Farmer:

One of the major concerns of Prairie agriculture today, appears to be that of encouraging young people to take up farming for their livelihood. To the young individual who wants to start farming, capital is the most scarce resource needed. However, others feel that the more formidable the restriction of capital, the fewer unqualified people will begin farming.[55] Nevertheless, it should be noted that farmers in North America are generally older than the

normally employed population and that in the future, it may not be possible to replace these human resources with persons best suited for agriculture.

Ottoson has outlined seven areas of concern in which tenure research is presently lacking:

1. interest rates and the availability and flexibility of arrangements for credit;
2. the price of land and whether it is established by non-agricultural use and demand;
3. the effect of tax policies (property, inheritance);
4. the role of migration from farms in increasing the incidence of inheritance of farms by non-farm residents;
5. the extent of the renewal of capital investment by each generation of farmers;
6. in a family operation, the effects of younger marriages, lengthened life expectancy, the length of time a son will work for his father;
7. the extent, and effects on farm operation transfer, of semi-retirement on the land of both farmers and people from non-farm areas and whether retirement insurance benefits tend to advance or postpone the transfer of land use and ownership.[56]

ii) Aspects of Risk and Uncertainty in Agriculture and Land Tenure:

Ottoson maintains that the tenure system cannot be used to eliminate the basic causes of risk and uncertainty. He states that:

> Risk can be reduced only through technological progress, such as the development of . . . rust-resistant wheat, whereas uncertainty can only be diminished by such actions as stabilizing the general level of prices and other economic factors which are variable but related among themselves. The most that can be achieved tenure-wise is to make the tenure system a neutral

> force when the farm operator attempts to deal with risk and uncertainty.[57]

However, Schickele maintains that

> institutional arrangements (such as land tenure) should be adjusted in such a way that every competent and honest farmer with at least an adequate minimum set of resources can remain solvent in the face of income losses caused by external risks.[58]

A research symposium on risk and uncertainty in agriculture, twenty years ago, concluded that research on tenure arrangements needed to be concerned with the reaction of (or effect on) the individual to risk and uncertainty in connection with tenure arrangements.

Specifically mentioned were:

1. the wide variation of income experienced,
2. fixed rental payments which shift the risk to the tenant,
3. tenants paying less under cash leases (buying larger income but assuming more risk), and
4. hit and miss methods by which adjustments are made between landlords and tenants and their relation to risk and uncertainty.[59]

In concluding, they mentioned the following areas for future research:

1. determination of income differentials under various ownership and rental arragements, or combinations thereof, considering both level and variation of income,
2. relation of economic rent to contract rent,
3. effect of creative bargaining in developing economic units on the reduction of risk,

4. determination of whether more knowledge on the part of landlords and tenants increases or decreases area of bargaining,
5. effect of public ownership on risk and uncertainty due to problems of multiple use, level of rent, capitalization of associated land resources and instability of tenure.[60]

None of these research problems have been pursued.

iii) Agricultural Programme Development Theory:

The importance of land tenure to various agricultural development programmes depends largely upon 1) the relationship of property to the distribution of income and 2) Government programmes which directly or indirectly affect the value of products, for example price supports or programmes which affect the distribution of rights in resources.[61]

Ottoson believes that government programmes which are of greatest relevance to land tenure are those that:

1. limit access to resources in order to control the supply of certain products,
2. assist in re-organizing or improving farms and farm production such as credit and extension programmes,
3. make such conservation and development investments in long term resource use as conservation payments to farms,

4. make personal assistance and welfare payments.[62]

McEntire, in his summary of world land policies, found that almost all governments, due to pressure from the agricultural population for income parity with other sectors, were involved in programmes such as:

1. price fixing, price supports, financial incentives for capital investment, education and social programmes and,
2. land consolidation, land marketing operations, control of land subdivision, control of maximum of minimum sizes of farms.[63]

Unfortunately, he does not offer any analysis of the effects of these programmes in the various countries.

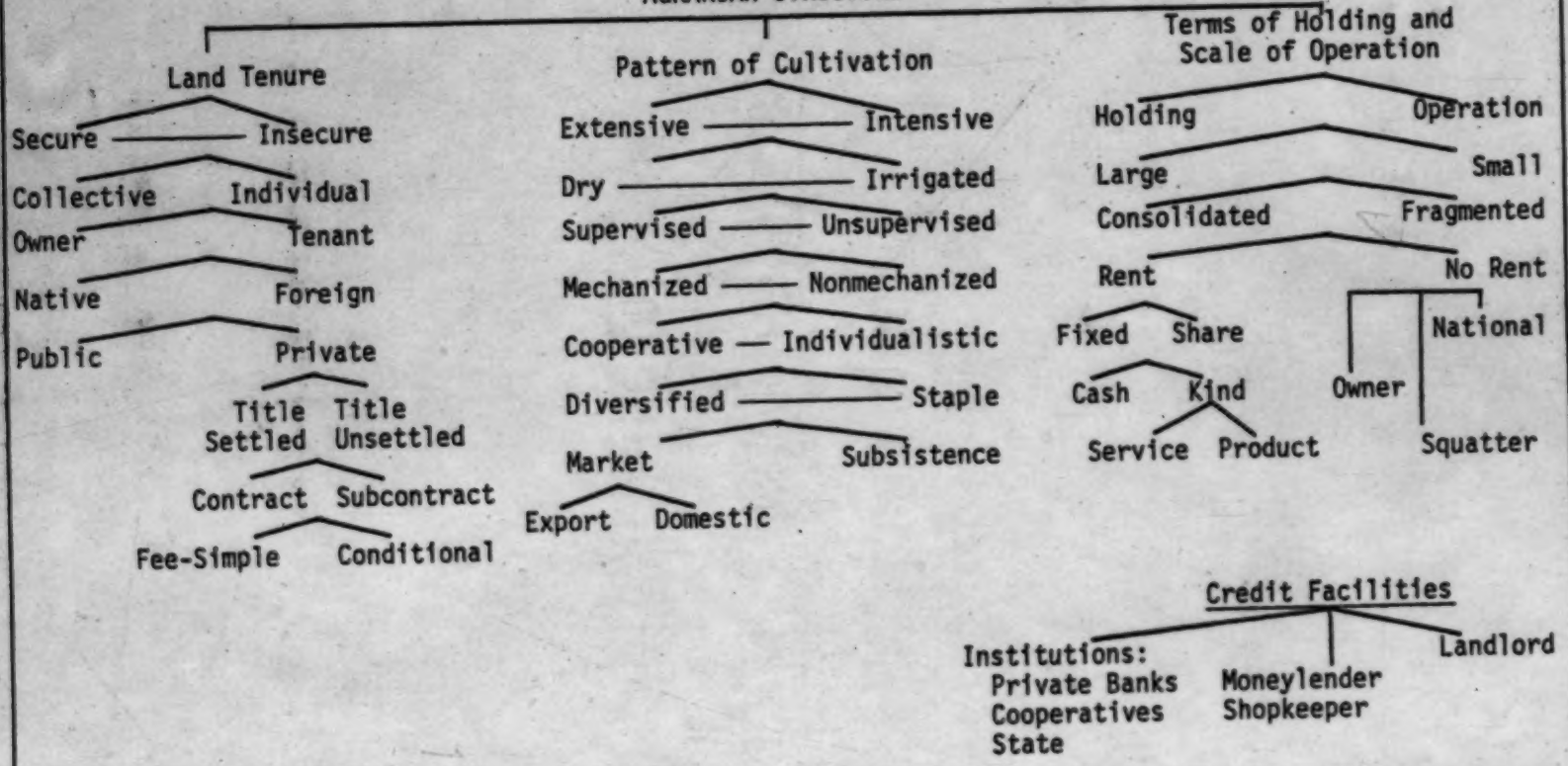
Land tenure research, particularly when associated with land and agrarian reform, encounters many problems involving the interrelationships between social and economic changes and processes. The function of land tenure research, according to Ottoson, should be to predict the effect of ownership and control arrangements on various economic and social variables.[64]

Tuma has proposed a model of the effects of land tenure reform on an agrarian structure, defined as consisting of three main sectors:

1. tenure or title to the land, and
2. pattern of cultivation and terms of holding, and
3. scale of operation (see Figure 3).

Figure 3

A MODEL OF AGRARIAN STRUCTURE



SOURCE: E. H. Tuma, Twenty-Six Centuries of Agrarian Reform, page 13.

Each of these sectors is subject to reform or change (reform implying an improvement, while change has no value implications). These sectors while related, are fairly independent of each other, as reform in one sector may or may not entail reform in another. Each sector as an independent entity can be the object of reform. On the other hand, change in one sector may have direct or indirect impact on another (for example, security of tenure may lead to intensive diversified market production). As well as the above considerations, the model of agrarian structures differentiates between ownership and operation of the land as the owner is not necessarily the operator. The model also differentiates between holding and operation, since one may hold a large amount of land while its operation may be on a small scale due to fragmentation or operation in small tenancies.[65]

Tuma, on the basis of this model, has stated that agrarian reform may be defined as a rapid improvement in one or more sectors of the agrarian structure. This definition subsumes both the historical concept of land reform and the modern one of agrarian reform. He, then, has defined agrarian reform as consisting of two general areas of reform: land tenure reform and land operation reform (reform of the pattern of cultivation or the terms of holding and scale of operation).

A model of land tenure reform was then developed and evaluated according to these two criteria:

1. whether the reform has been consistent with the objectives of the reformers,

2. whether it has been favourable to the farmers and operators of the land.[66]

Parsons has stated that reform occurs only when certain conditions such as concentration of land or extreme inequalities of wealth, income and power are present.[67] However, Tuma has stated further that the most significant precondition appears to be dynamic changes in political structure and in economic organization.[68]

On the basis of examples of agrarian reform from England, Russia, Mexico, France and early Egyptian, Roman and Greek cultures, he has developed some general "propositions" on land reform. Despite the cultural and historical differences of these countries, he has proposed that there is a similarity in the objectives of the reformers, in the processes of reform and thus, in the results. It should be noted that there is sometimes a distinction between the objectives and the needs (social and economic) of the peasants and the reformers and that, in the model which Tuma has proposed, both systems start with the same background and preconditions (See Figure 4).

Differences in agrarian reform are of philosophy and basic premises (that is, objectives) which in turn dictate methodology (process), and of extent of implementation (effects). Class 1 and Class 2 illustrate the two extreme of ideal ways of reform. According to Tuma, the objectives, processes, and subsequent effects of Class 1 are generally characteristic of western capitalistic democracies, while those of Class 2 are characteristic of socialistic or communistic states. A Class 3 which would be a mixture of Class 1 and 2 is postulated but not developed.

Figure 4

TYPES OF AGRARIAN REFORM

Class I	OBJECTIVES	Class II
Mutually Exclusive Features		
1a Maintain and promote private tenure		Eliminate private tenure and promote public tenure
2a Advocate individual holding and operation of the land		Advocate collective holding and operation
3a Advocate and promote small family farms*		Advocate large-scale business farms*
4a Advocate reduction of rural wealth and income inequality		Advocate elimination of rural wealth and income equality
5a Promote a democracy based on conflict with checks and balances		Promote a classless democracy based on harmony
Common Features		
6a Both advocate social and political mobility, but Class I tends to gradualism while Class II advocates overthrowing existing institutions and changing the criteria of status and power.		
7 Both seek legitimacy of a political structure and put great emphasis on this political objective; however, Class I may do so to stabilize old or new political systems, while Class II does it to stabilize a new system.		

Figure 4 (continued)

TYPES OF AGRARIAN REFORM

Class I	Class II
PROCESSES	
Mutually Exclusive Features	
1b Involves no or only limited land distribution, and discriminates among tenure groups	Nationalizes the land and distributes to the tillers, and applies equally to all tenure groups
2b Maintains individual operations	Creates collective operations
3b Maintains small farms and pays little attention to productivity	Creates large farms and pays primary attention to productivity
4b Maintains inequality of rural wealth and income, and advocates compensation	Eliminates inequality of rural wealth, but applies a new conception to income, and rejects compensation
5b Maintains class differences	Eliminates class differences
Common Features	
6b Both use reform as a means to same end as in 6a, but Class I implements limited measures, while Class II introduces comprehensive ones.	
8 Both follow a crisis.	
9 Both involve reaction, though the impact in Class II is temporary.	

Figure 4 (continued)

TYPES OF AGRARIAN REFORM

	Class I	Class II
	EFFECTS	
1c-2c	Private individual tenure and tenancy	Public collective tenure and no tenancy
3c	Small-scale operation, little improvement of labor productivity and toleration of underemployment	Large-scale operation, higher labor productivity, and reduction of underemployment
4c	Continued inequality and concentration of wealth and income. Potentially incapable of creating equality	Elimination of ownership and hence of wealth concentration; differential income consistent with new meaning of equality
5c	Continued class conflict and apparent instability of political system	Potentially capable of creating equality. Absence of class conflict and apparent stability of political system
6c	Both cause social change, but in Class II the change amounts to an upheaval.+	
10	Both advance state control, but in Class I it is limited while in Class II it is complete.	
11	Dual tenure	Uniform tenure

SOURCE: E. H. Tuma, Twenty-Six Centuries of Agrarian Reform, page 224.

There are seven generalizations about agrarian reform which he has derived from his theory. These are summarized as follows:

1. To the extent that private ownership of land is permitted and land sale is practised, it is highly probable that there will be land concentration. The social and political problems thus created will usually be solved by using land tenure reform.
2. There is a relationship between land tenure and the system of economic organizations and political structure. A small change in the economic or political structure will exert pressure on the land tenure system which in turn will cause a greater change in the economic organization and political structure.
3. Though the objectives of reform are valid, the primary objectives are usually political, regardless of who initiates the reform.
4. When there are political reasons for reform, land tenure reforms will benefit the peasant class in proportion to their significance in the reform group.
5. Land tenure reform improves agricultural labour productivity to the extent that it promotes large-scale operation of the land and allows capital investment, regardless of ownership. Land tenure reform will be accompanied by a reduction of surplus labour if new sources of employment are available.

6. Land tenure reform equalizes wealth and reduces concentration of land ownership and private ownership becomes less absolute.
7. Land tenure reform can achieve short term political goals, such as stability and legitimacy of the regime in power, but it doesn't satisfy the long term objectives of complete wealth equalization.[69]

Tuma's model of agrarian reform is probably the best descriptive model of the effects of land tenure reforms, to date. However, the lack of economic data to make quantitative comparisons of various changes and the lack of any economic models (as well as the strong underlying bias towards capitalistic land tenure reforms) limit the model's usefulness in describing land tenure change.

Summary

As a discipline, the function of land tenure analysis has been to predict the effect of ownership and control on various economic and social variables. Economic research has centred on the efficient allocation and use of land and related resources, on the economic relations associated with landed property, and on the institutions by which land is controlled and their effect on income. Socio-economic research has been mainly concerned with the structuring of agricultural development programmes. Most of the work is descriptive and consists of problem definition only. Some of the concepts from these studies will form the basis for the hypotheses of this thesis, as contained in Chapter Five.

List of Footnotes: Chapter II - Review of Land Tenure Literature

1 Max M. Tharp, "A Reappraisal of Farm Tenure Research", Land Economics, 24, 4 (Nov., 1948), page 315.

2 Earl O. Heady, "Optimal Sizes of Farms under Varying Tenure Forms, Including Renting, Ownership, State and Collective Structures", American Journal of Agricultural Economics, 53, 1, (Feb., 1971), pages 17-25.
Elias H. Tuma, Twenty-Six Centuries of Agrarian Reform. A Comparative Analysis (Berkeley: University of California Press, 1965).

3 John F. Timmins, "Tenure and Size" in Size, Structure and Future of Farms, ed. by A. Gordon Ball and Earl O. Heady (Ames, Iowa: The Iowa State University Press, 1972).
R. A. Stutt, "Changes in Land Use and Organization in the Prairie Area of Saskatchewan During the Period 1951-1966", Canadian Farm Economist, 5, 6 (Feb., 1971), pages 11-19.
M. L. Szabo, "Depopulation of Farms in Relation to the Economic Conditions of Agriculture on the Canadian Prairies". Geographical Bulletin, 7 (1965), pages 187-202.

4 Erik G. Furubotn and Svetozar Pejovich, The Economics of Property Rights, (Cambridge, Mass.: Ballinger Publishing Company, 1974).
Peter Dorner, "Land Tenure Institutions" in Institutions in Agricultural Development, ed. by Melvin G. Blase (Ames: Iowa State University Press, 1971).

5 Leonard A. Salter, Jr., A Critical Review of Research in Land Economics, (Minneapolis: University of Minneapolis Press, 1948), page 228.

6 Ibid., pages 230-231.

7 Ibid.

8 Jacob A. Brown and Robert J. Bens, Farm Tenure in Saskatchewan, (Saskatoon: University of Saskatchewan, Department of Agricultural Economics, ARDA Project #27072, June, 1971), page 6.

9 A. Gordon Ball and Earl O. Heady, "Trends in Farm Enterprise, Size and Scale" in Size, Structure and Future of Farms, ed. A. Gordon Ball and Earl O. Heady (Ames, Iowa: The Iowa State University Press, 1972), page 40.
John F. Timmons, "Tenure and Size" in Size, Structure and Future of Farms, ed. by A. Gordon Ball and Earl O. Heady, (Ames, Iowa: The Iowa State University Press, 1972), page 235.

10 Ball and Heady, "Trends in Farm Enterprise Size and Scale", page 41.

11 Ibid., page 42.

12 Ibid.

13 Ibid.

14 Ibid.

15 Ibid.

16 Timmons, "Tenure and Size", page 237.

17 Ibid.

18 Earl O. Heady, "Optional Sizes of Farms under Varying Tenure Farms, including Renting, Ownership, State and Collective Structures", American Journal of Agricultural Economics, V. 53, 1 (February, 1971) page 25.

19 Dorner, "Land Tenure Institutions".

20 E. O. Heady and E. W. Kehrberg, Relationship of Crop-Share and Cash Leasing Systems to Farming Efficiency, (Ames: Iowa Agricultural Experimental Station Bulletin #386, 1972).

21 P. W. Barkley and W. H. Pine, The Effects of Tenure on Farm Improvements, (Manhatten: Kansas Experimental State Bulletin #454, 1963).

22 V. L. Hurlburt, Use of Farm Resources as Conditioned by Tenure Arrangements, (Lincoln: Nebraska Agricultural Experiment Station, Bulletin #215, 1964).

23 Raleigh Barlowe, Land Resource Economics, (2nd edition; Englewood Cliffs: Prentic Hall, Inc., 1972), page 447.

24 H. W. Ottoson, "The Application of Efficiency to Farm Tenure Arrangements", Journal of Farm Economics, 37 (1955) page 1342.

25 Ibid.

26 W. G. Miller, W. E. Chryst and H. W. Ottoson, Relative Efficiencies of Farm Tenure Classes in Intrafirm Resource Allocation, (Ames: Iowa Agricultural Experiment Station, Research Bulletin #461, 1958).

27 Ibid.

28 Timmons, "Tenure and Size", page 238.

29 W. G. Miller et al, Relative Efficiencies of Farm Tenure Classes.

30 O. E. Johnson, "Economic Analysis, the Legal Framework and Land Tenure Systems", Journal of Law Economics, April, 1972.

31 H. W. Ottoson, Gene Wunderlich and Howard G. Dresslin, Land Tenure Research: Scope and Nature, 1962, (Washington: United States Department of Agriculture, Economic Research Service Bulletin #19, 1962), page 6.
L. A. Salter, Land Economics, page 214.

32 Barlowe, Land Resource Economics, page 573.

33 Salter, Land Economics, page 218.

34 Barlowe, Land Resource Economics, page 589.

35 Marvin S. Anderson, Today's Taxes, Tomorrow's Agriculture, (Ottawa: Agricultural Economic Research Council of Canada, 1973), page 13.

36 Barlowe, Land Resource Economics, page 586.

37 Ottoson, et al, Land Tenure Research, page 8-10.

38 Ibid.

39 Ibid.

40 Ibid.

41 Ibid.

42 Ibid.

43 Ibid., page 24.

44 H. Demsetz, "Toward a Theory of Property Rights", American Economic Review, 57 (May, 1967), pages 347-373.

45 an externality - includes external costs and benefits, pecuniary as well as non-pecuniary.

internalization - is defined as a process, usually a change in property rights, that enables these effects to bear (in greater degree) on all interacting persons.
H. Demetz, "Toward a Theory of Property Rights".
S. Cheung, "The Structure of a Contract and the Theory of a Non-Exclusive Resource", Journal of Law Economics, 13 (April, 1970), Pages 49-70.
Eirik G. Furubotn and Svetozar Pejovich, "Property Rights and Economic Theory: A Survey of Recent Literature".

46 Property rights develop to internalize externalities when the gains of internalization become larger than the cost of internalization.

47 E. G. Furubotn and Svetozar Pejovich, "Property Rights and Economic Theory".

48 L. A. Salter, Land Economics, page 186.

49 Joseph Ackerman, "Status and Appraisal of Research in Farm Tenancy", Journal of Farm Economics, Vol. 23, 1 (February, 1941), page .

50 L. A. Salter, Land Economics, page 187.

51 Ibid.

52 Two examples of recent work:
W. F. Hornby, "The Mwea Irrigation Settlement", Geography, Vol. 58, 3 (July, 1973), pages 255-259.

A. J. Christopher, "Recent Trends in Land Tenure in Rhodesia", Geography, Vol. 56, 2 (April, 1971), pages 140-144.

53 J. O. Broek, The Santa Clara Valley, California: A Study in Landscape Changes. (Utrecht: Geogr. in Geol. Mededeelingen, Anthropo-Geogr. Reeks No. 4, 1932).

John Fraser Hart, "Field Patterns in Indiana", Geographical Review, Vol. 58, (July, 1968) pages 450-471.

David Lowenthal, "The Common and Divided Lands of Nantucket", Geographical Review, Vol. 46, (1956), pages 399-403.

H. B. Johnson, "Rational and Ecological Aspects of the Quarter Section: An Example from Minnesota", Geographical Review, Vol. 47, (1957), pages 330-348.

T. R. Weir, "Pioneer Settlement of Southwest Manitoba, 1879-1901", Canadian Geographer, Vol. 8 (1964), pages 64-71.

54 R. W. G. Bryant, Land: Private Property and Public Control. (Montreal: Harvest House, 1972).

D. R. Denman, Origins of Ownership: A Brief History of Land-ownership and Tenure in England from the Earliest Times to the Modern Era. (London: George Allan and Unwin, 1958).

D. R. Denman, "Contemporary Problems of Land Ownership", Geography, Vol. 50, (1965), page 390.

W. M. Kollmorgen, "Land Tenure and Irrigation in Utah", Geographical Review, Vol. 43 (1953), page 110

S. Zuckerman, Land Ownership and Resources. (Cambridge: Department of Estate Management, 1960).

55 Ottoson et al, Land Tenure Research, page 5.

56 Ibid.

57 Ibid.

58 Rainer Schickele, "Theories Concerning Land Tenure", Journal of Farm Economics, 34 (1952), pages 734-744.

59 Proceedings from the Research Conference on Risk and Uncertainty in Agriculture. (Fargo: North Dakota Agricultural Experimental Station Bulletin #400, 1955), page 15.

60 Ibid., page 54.

61 Ottoson et al, Land Tenure Research, page 10.

62 Ibid.

63 Davis McEntire and Danilo Agostine (ed.) Toward Modern Land Policies. (Padua: Institute of Agricultural Economics and Policy, University of Padua, 1968).

64 Ottoson et al, Land Tenure Research, page 25.

65 Elias H. Tuma, Twenty-Six Centuries of Agrarian Reform. (Berkeley: University of California Press, 1965), pages 11-12.

66 Ibid., page 14.

67 Kenneth H. Parsons, "Land Reform and Development" in Land Tenure ed. by Kenneth H. Parsons, Raymond J. Penn and Philip M. Raup (Madison: University of Wisconsin, 1956), page 5.

68 Elias H. Tuma, Twenty-Six Centuries of Agrarian Reform, page 222.

69 Ibid., pages 221-243.

CHAPTER III

REVIEW OF ALBERTA PRIVATE LAND TENURE STATISTICS AND RELATED LITERATURE

General Introduction

Moyer et al as well as Brown and Bens have identified two major objectives of the North American land tenure system which have been:

1. the attainment of full owner-operatorship of farm's resources, and
2. the achievement of reasonably secure and adequate net incomes.[1]

In order to gain insight into the pattern, significance, and contributions of the land tenure system to other social and economic aspects of the agricultural firm, it is necessary to describe the farm structure. Until recently, most studies of farm structure in Canada have centred on productivity and efficiency measures, various dimensions of size and scale, land values or sociological aspects such as education, migration.[2] In the following chapter, a review of census and other secondary source data from Alberta will be compared with results from similar descriptive data analyses in the United States and Saskatchewan, from the viewpoint of land tenure effects.

Size and Scale Considerations

Timmons has found in his studies in the United States that measures of farm size which are most influenced by the land tenure system are labor requirements, operating outlays, land value, value of production per farm and acreages of farms.[3]

The major period of settlement in Alberta occurred between 1900 and 1930. The number of farms in Alberta, as recorded in the Census of Canada, reached a peak high of 99,732 in 1941 and that has since decreased by a third to the present figure of 62,702 farms. The average area of these farms has almost doubled since 1941 (434 acres ((175.63 hectares)), 1941; 790 acres ((319.70 hectares)), 1971), and the total farm area has increased by some six million acres (2.43 million hectares) over that period (See Appendix 2).

The average number of acres per farm has increased in the last three decades with sustained increases in farm sizes over 960 acres (388.50 hectares, 1 1/2 sections) due to more efficient capital and labor use. The other land-size groups which have shown an increase in acreage are the farms with eleven to one hundred acres (5 to 41 hectares). These have reflected the increase in part-time farming, rural subdivision, and recreational land use.

During this period, the number of acres of improved land has continuously increased. Both acreages of land under crops and under pasture land have grown dramatically, the latter reflecting the increasing diversification of grain farm enterprises to livestock. Land acreage in summerfallow has remained relatively constant. At the same

time, unimproved acreage including woodlands, has remained relatively constant. Thus, most of the new cropland has resulted from new land being broken, particularly in the northern part of the province.[4] (In 1971, 3,616 farms averaged 47.58 acres ((19.25 hectares))/farm of new land broken.)

Land real estate values have generally escalated in the last few decades. In 1963, the average value per acre was $47.00; by 1967 it was $73.00 (Average value per hectare was $116.14 and $180.37, respectively).[5] At the end of the decade, the average price per acre fell to $54.50/acre ($134.67/hectare). In 1971, the average price of land started to rise and by 1972-73, was $95.02/acre ($234.79/hectare).[6] In 1974-75, the average price per acre of all rural real estate sold in Alberta was $138.37 ($341.91/hectare), with sales of 3.58 million acres (1.36 million hectares). This represented an increase of approximately 6 percent in the total acreage sold with a corresponding 35.6 percent increase in average rural real estate values, over 1973 figures. Agricultural real estate values, while showing a large variation across the province had increased to an average value of $108.13/acre ($267.19/hectare) in 1974 from $54.50/acre ($134.67/hectare) in 1970 - an increase of 98.4 percent.[7]

It has been seen in Alberta that the largest average number of acres per farm are operated by part-owner/part-tenants (1,316.67 acres or 532.84 hectares), followed by tenants (890.55 acres or 360.39 hectares), with full owners having the fewest average number of acres (476.41 acres or 192.80 hectares). (See Table 2.) As is indicated in Figure 5 (Table 3), the number of full-owners is decreasing while the

Table 2

CHARACTERISTICS OF FARM SIZE IN ALBERTA

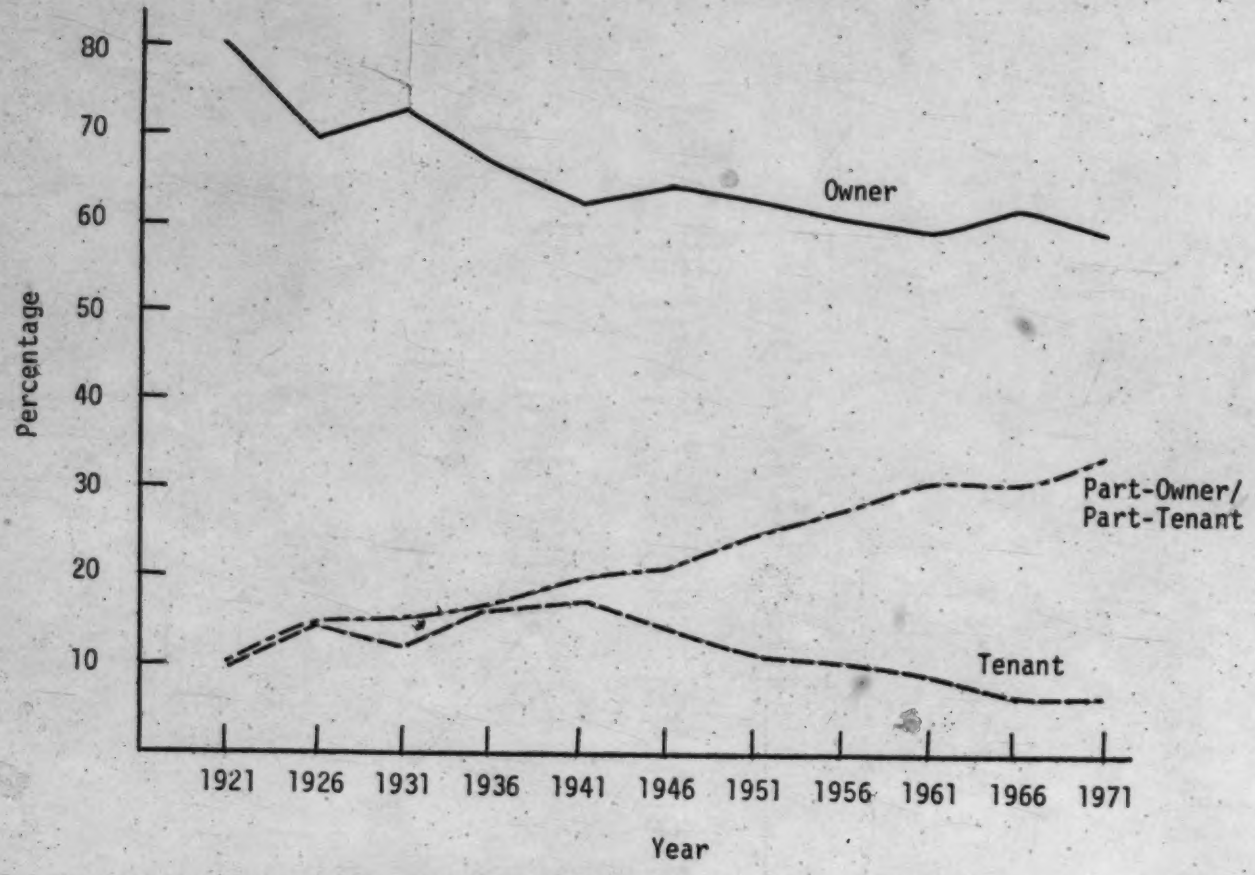
BY FARM TENANCY TYPE, 1971

Item	Total Census Figure	Type of Tenancy		
		Owner	Tenant	Part-Owner/ Part-Tenant
Number	62,702	37,193	4,225	21,284
Percentage		59.3	6.7	33.9
ACREAGES (Hectares)				
Av. No. of Acres	789.54	476.41	890.55	1,316.67
(Hectares)	319.52	192.80	360.39	532.84
Av. No. of Improved Acres	453.89	321.99	353.25	704.37
(Hectares)	183.68	130.30	142.96	285.05
Av. No. of Unimproved Acres	335.65	154.42	537.30	612.30
(Hectares)	135.83	62.49	217.44	247.79
CAPITAL VALUES				
Av. Total Capital Value ($)	83,603	63,941	64,610	121,732
Av. Capital Value of Land and Buildings ($)	56,302	42,939	48,006	81,300
Av. Capital Value of Machinery & Equipment ($)	13,834	10,981	9,004	19,780
Av. Capital Value of Livestock & Poultry ($)	13,463	10,018	7,597	20,648
VALUE OF PRODUCTION				
Av. Value of Agric. Products Sold ($)	13,278	10,464	7,836	18,806
LABOUR REQUIREMENTS				
Total Weeks of Labour per Farm Reporting	26.3	22.6	16.9	31.5
Male	25.2	21.1	16.5	30.7
Female	22.1	26.7	8.8	17.6
Pd. Yr. Round Wrkr.	2.2	2.3	1.5	2.9
Av. Days of Operator Off-Farm Work	149.9	161.7	165.6	119.0

SOURCE: Statistics Canada: Alberta Agriculture, 1971.

FIGURE 5

TENANCY OF ALBERTA FARMS, 1921 - 1971



SOURCE: Statistics Canada, Alberta Agriculture, 1971.

Table 3

TENANCY OF ALBERTA FARMS, 1921-1971

	Year	1921	1926	1931	1936	1941	1946	1951	1956	1961	1966	1971
Farms	Total No.	74,000	68,823	86,917	89,550	93,200	84,350	84,315	79,424	73,212	69,411	62,702
Managed	No.	666	619	261	358	559	337	590	794	439	486	--
	%	0.9	0.9	0.3	0.4	0.6	0.4	0.7	1.0	0.6	0.7	--
Tenant	No.	7,178	9,979	10,517	14,507	15,937	12,315	9,781	8,498	6,736	4,581	4,225
	%	9.7	14.5	12.1	16.2	17.1	14.6	11.6	10.7	9.2	6.6	6.7
Owner-Tenant	No.	7,400	10,255	12,951	14,776	18,454	17,545	21,079	21,842	22,769	21,309	21,284
	%	10.0	14.9	14.9	16.5	19.8	20.8	25.0	27.5	31.1	30.7	33.9
Owner	No.	58,756	47,970	63,189	59,909	58,250	54,153	52,865	48,290	43,268	43,035	37,193
	%	79.4	69.7	72.7	66.9	62.5	64.2	62.7	60.8	59.1	62.0	59.3

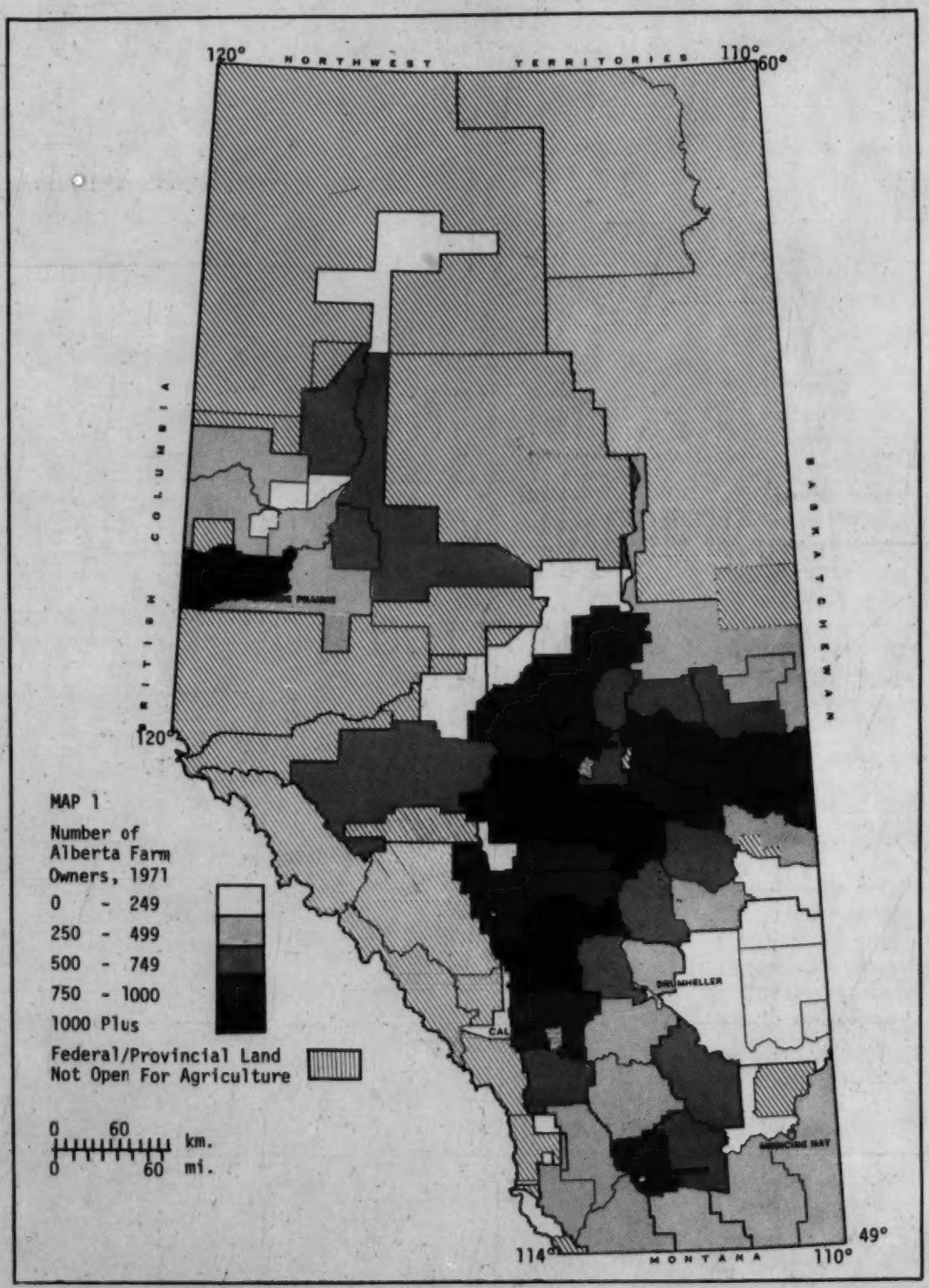
SOURCE: Alberta Agriculture: A History in Graphs, 1972.

Statistics Canada, Alberta Agriculture, 1971.

number of part-owner/part-tenants is increasing, a pattern similar to other Prairie Provinces.[8] Indeed, the percentage area operated by a tenant (both tenant and part-tenant) has increased to more than one-third of farmland currently operated (See Figure 6, Table 4). The majority of fully-owned farms are found in the 70-399 acreage size group (28-162 hectares) and the number of fully-owned farms beyond that size group decreases rapidly from there (See Figure 7, Table 5).

The number of farms operated by part-owner/part-tenant increased as the size of farm increased with the majority in the 760-1,119 acreage group (308-452 hectares). It is interesting to note that part-owners/part-tenants operate, on the average, twice as much improved acreage as the tenant or owner; however, part-owners/part-tenants and tenants have almost twice as much unimproved acreage as the average farmer, and approximately four times the amount owned by the full-owner. (See Table 2.) Similar patterns of ownership have been found in recent separate studies in the United States by Boxley, Johnson, Moyer et al.[9]

The distribution of farm owners and of farm part-owners/part-tenants are shown in Maps 1 and 2 respectively. A close positive correlation has been found between soil productivity and the population density and distribution throughout the province.[10] (See Appendix 2 for distribution maps.) The most densely populated areas occur in the black and dark grey soils. Concentrations of population occur in the other soil groups wherever more fertile soils are found, for example, the Peace River region.


120°
NORTHWEST TERRITORIES
110°
60°
BRITISH COLUMBIA
SASKATCHEWAN
120°
MAP 1
Number of
Alberta Farm
Owners, 1971
0 - 249
250 - 499
500 - 749
750 - 1000
1000 Plus
Federal/Provincial Land
Not Open For Agriculture
0 60 km.
0 60 mi.
DRUMHELLER
MEDICINE HAT
114°
MONTANA
110°
49°

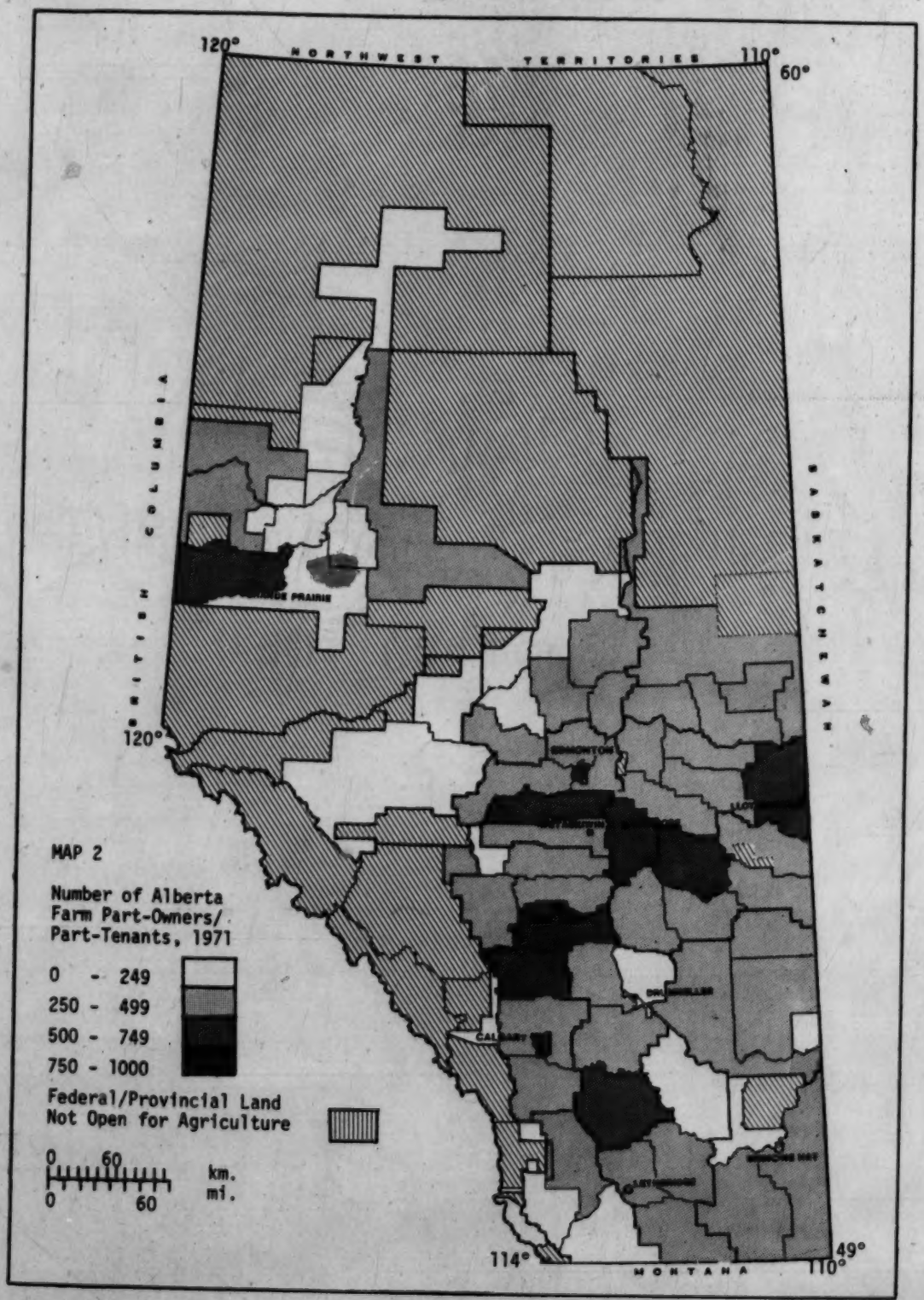
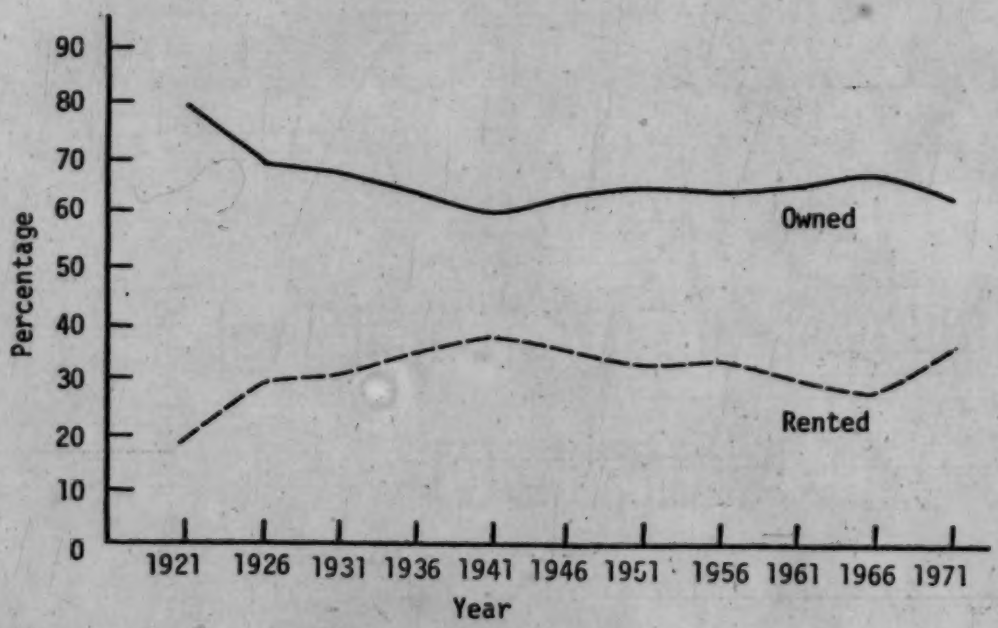

120°
NORTHWEST TERRITORIES
110°
60°
BRITISH COLUMBIA
SASKATCHEWAN
120°
MAP 2
Number of Alberta Farm Part-Owners/ Part-Tenants, 1971
0 - 249
250 - 499
500 - 749
750 - 1000
Federal/Provincial Land Not Open for Agriculture
0 60 km.
0 60 mi.
114°
MONTANA
110°
49°

Figure 6

ALBERTA FARMLAND ACREAGE OWNED AND RENTED, 1921 - 1971



SOURCE: Statistics Canada, Alberta Agriculture, 1971.

Table 4

ALBERTA FARMLAND ACREAGE OWNED AND RENTED, 1921-1971

Year	Area In Farm '000 ac	Area Operated By		% Area Operated By	
		Owner '000 ac	Tenant '000 ac	Owner %	Tenant %
1921	29,293	23,727.3	5,565.7	81	19
1926	28,573	20,286.8	8,286.2	71	29
1931	38,977	26,894.1	12,082.9	69	31
1936	40,540	26,351	14,189	65	35
1941	43,277	26,831.7	16,445.3	62	38
1946	41,451	26,528.6	14,922.4	64	36
1951	44,460	29,343.6	15,116.4	66	34
1956	45,970	29,880.5	16,089.5	65	35
1961	47,229	32,021.3	15,207.7	68	32
1966	48,983	34,533	14,450	71	29
1971	49,506	31,712	17,794	64	36

Year	Area in Farm '000 ha	Area Operated by	
		Owner '000 ha	Tenant '000 ha
1921	11 854.47	9 602.11	2 252.36
1926	11 563.09	8 209.78	3 353.31
1931	15 773.45	10 883.67	4 889.78
1936	16 405.97	10 663.88	5 742.09
1941	17 513.60	10 858.41	6 655.18
1946	16 774.64	10 735.75	6 038.89
1951	17 992.34	11 874.94	6 117.40
1956	18 603.42	12 092.22	6 511.20
1961	19 112.92	15 791.37	6 154.34
1966	19 822.73	13 975.02	5 847.71
1971	20 034.39	12 833.40	7 200.98

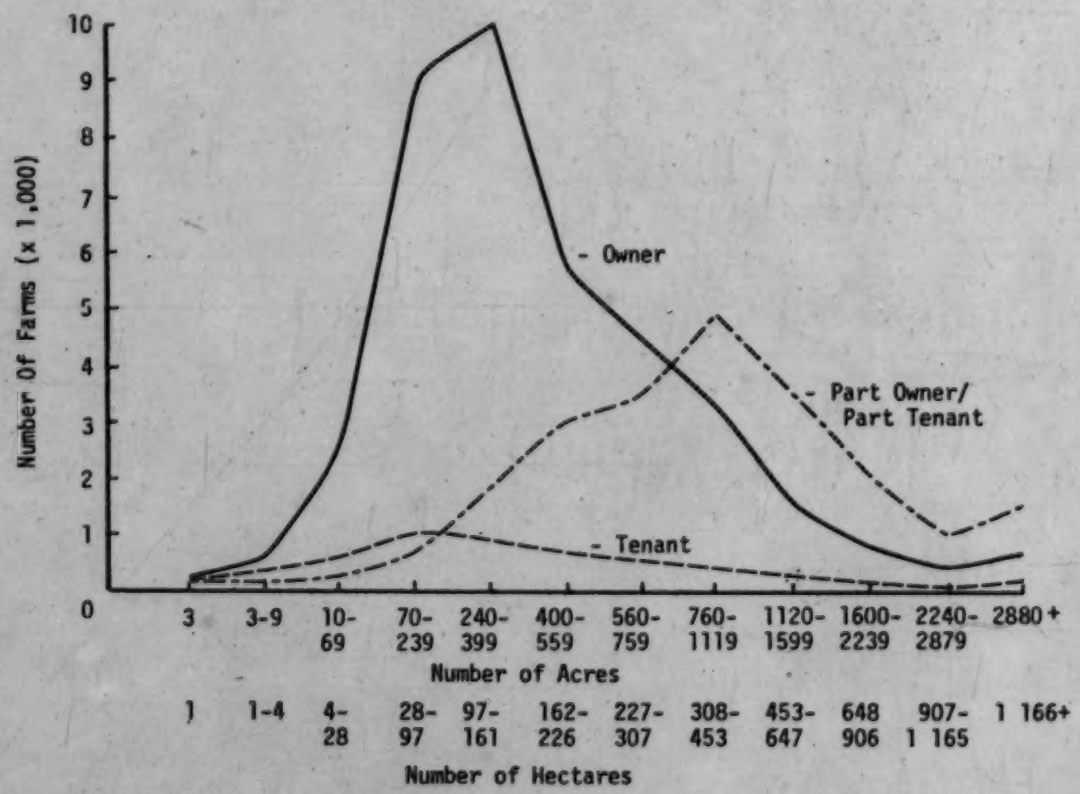
SOURCE: Alberta Agriculture: A History of Agriculture in Graphs, 1972.

Statistics Canada: Alberta Agriculture, 1971.

Figure 7

ALBERTA FARM TENURE BY ACREAGE OF FARMS

AND NUMBER OF FARMS, 1971



SOURCE: Statistics Canada, Alberta Agriculture, 1971

Table 5

SIZE OF FARM LAND BASE AREA

No.	Item	Unit	Total Census-Farms	Acres	Under 3	3-9	10-69	70-239	240-399	400-559	560-759	760-1,119	1,120-1,599	1,600-2,239	2,240-2,879	2,880+
				Hectares 1/	1	1-4	4-28	28-97	97-161	162-226	227-307	308-453	453-647	648-906	907-1 165	1 166+
1	Total Number of Farms	No.	62,702		204	700	2,521	10,609	12,606	9,128	8,196	8,478	4,846	2,479	1,073	1,862
	Farms Classified by Tenure of Operator:															
2	Owner	No.	37,193		139	555	2,137	9,132	9,730	5,678	4,315	3,275	1,321	480	196	235
3	Tenant	No.	4,225		65	136	309	959	927	493	415	387	228	113	50	143
4	Part-Owner/ Part-Tenant	No.	21,284		--	9	75	518	1,949	2,957	3,466	4,816	3,297	1,886	827	1,484

SOURCE: Statistics Canada: Alberta Agriculture, 1971.

1/ Acres converted (1 ac. = .404686 ha.) and rounded to nearest whole number.

There is a significant difference in the land tenure pattern between soil groups (See Table 6). Farmers in the brown soil group own 41 percent, while those in the dark brown zone own 67 percent of their farmland. However, the black, dark grey and grey wooded soil farmers own approximately 75 percent of the land they farm. This basic difference in ownership percentage is probably due more to the extensive acreage of public lands available for leasing in Improvement Districts 1, 2 and 3 as well as Special Areas 2, 3 and 4, than differences in farmers' attitudes toward land ownership.[11]

However, acreage of farms does not indicate either the value of the land or the total production per farm, both of which are more indicative of size than acreage, particularly in terms of productivity. Part-owners/part-tenants in Alberta have twice the average total farm capital value of that of the full-owners and tenants. The same is observed for average capital value of land and buildings, machinery and equipment, and livestock and poultry. (See Table 2.) Part-owners/part-tenants also sell approximately twice the value of agricultural products sold by full-owners and tenants. As is illustrated in Figure 8, Table 7, full-owners dominate the $5,000 and under category while the distribution of part-owners/part-tenants falls between the $10,000 and $15,000 value of agricultural products sold. Tenant farmers maintain the lowest figure throughout.

A breakdown of agricultural land values associated with different types of tenure is not available for Alberta. In the United States, it was found that the full-owner had the lowest average land value per farm, while the part-owner/part-tenant had the second highest

Table 6

ALBERTA SOIL GROUPS BY FARMLAND TENURE TYPE, 1971

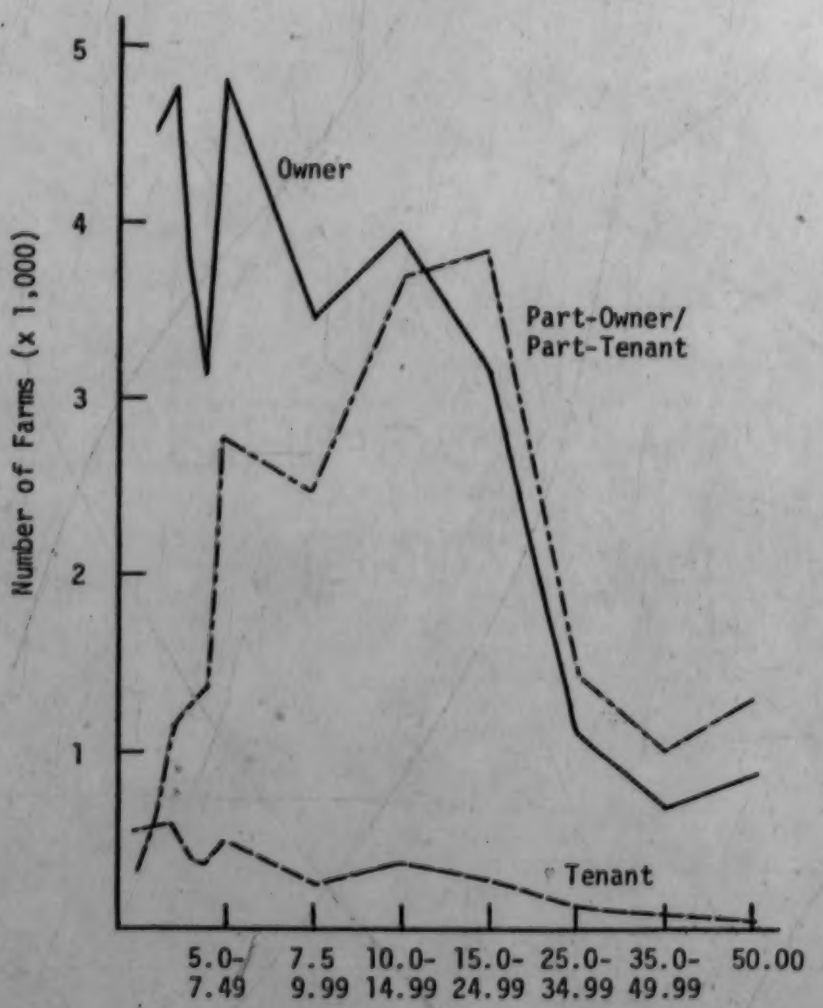
Soil Groups	Total Area Farmed		Area Owned		Area Owned as a % of Total Area Farmed
	Acres	Hectares	Acres	Hectares	
Brown	12,862,561	5 205 298.36	5,329,718	2 156 862.26	41
Dark Brown	8,126,683	3 288 754.84	5,404,039	2 186 938.93	67
Black	16,320,887	6 604 834.48	11,927,748	4 826 992.63	73
Dark Grey	6,906,337	2 794 897.90	5,228,461	2 115 884.97	76
Grey Wooded	4,956,046	2 005 642.43	3,585,226	1 450 890.77	72
TOTAL	49,172,514	19 899 428.00	31,475,192	12 737 569.55	64

	Area Rented		Area Rented as a % of Total Area Farmed
	Acres	Hectares	
Brown	7,532,843	3 048 436.10	59
Dark Brown	2,722,644	1 101 815.91	33
Black	4,393,139	1 777 841.85	27
Dark Grey	1,677,876	679 012.93	24
Grey Wooded	1,370,820	554 751.66	28
TOTAL	17,697,322	7 161 858.45	36

SOURCE: Hu Harries and Associates Ltd., The Future Land Needs for Agriculture, page 43.

FIGURE 8

ALBERTA FARM TENURE FOR NUMBER OF FARMS BY ECONOMIC CLASSIFICATION OF AGRICULTURAL PRODUCTS SOLD, 1971



SOURCE: Statistics Canada, Alberta Agriculture, 1971.

Table 7

ALBERTA FARM TENURE TYPE FOR NUMBER OF FARMS
BY ECONOMIC CLASSIFICATION OF AGRICULTURAL
PRODUCTS SOLD, 1971

No.	Item	Unit	Total Census-Farms	Value of Agricultural Products Sold												Institutional Farms, etc.
				$ 50-249	$ 250-1,199	$1,200-2,499	$2,500-3,749	$3,750-4,999	$5,000-7,499	$7,500-9,999	$10,000-14,999	$15,000-24,999	$25,000-34,999	$35,000-49,999	$50,000+	
1	Total Number of Farms	No.	62,702	3,823	5,674	6,494	5,477	4,821	8,079	6,167	8,007	7,292	2,657	1,797	2,236	178
	Farms Classified by Tenure of Operator:															
14	Owner	No.	37,193	2,976	4,493	4,742	3,802	3,092	4,812	3,443	3,944	3,161	1,101	698	864	65
15	Tenant	No.	4,225	552	587	599	400	361	492	257	369	283	103	68	57	97
16	Part-Owner/ Part-Tenant	No.	21,284	295	594	1,153	1,275	1,368	2,775	2,467	3,694	3,848	1,453	1,031	1,315	16

SOURCE: Statistics Canada: Alberta Agriculture, 1971.

average land value after a manager tenure group. Land values have definitely played a large part in the switch from full-owner to part-owner/part-tenant.[12]

For the first time in 1971, the Census of Agriculture included questions on farm business organization. An analysis of types of farm organization by tenure type indicates that:

1. approximately 60 percent of those holding land as private individuals are full-owners,
2. while of those holding land in a partnership, 47.58 percent are full owners. (See Table 8.)-

Of the farmers involved in partnerships or family corporations, approximately half are owner-operated and half part-owner/part-tenant.[13] These two types of business organizations have shown a dramatic increase in average production per farm compared with that of the private individual, due perhaps to the combined increase in resources and the decrease in risk-taking through shared decision-making.[14]

In considering the number of farm mortgages, it is interesting to note that the highest number of mortgages occur in the 560-1,119 acreage (227-452 hectares) group where most of the farms are operated by part-owner/part-tenants. (See Figure 9, Table 9.) The largest number of farms fall into the 70-239 and 240-399 acreage groups (28-97 hectares and 97- 162 hectares respectively). The lower number of mortgages in the 70-239 (28-97 hectares) acreage group could indicate the number of farms which are passed from father to son, or the difficulty in obtaining a mortgage on an uneconomic land unit due to the

Table 8

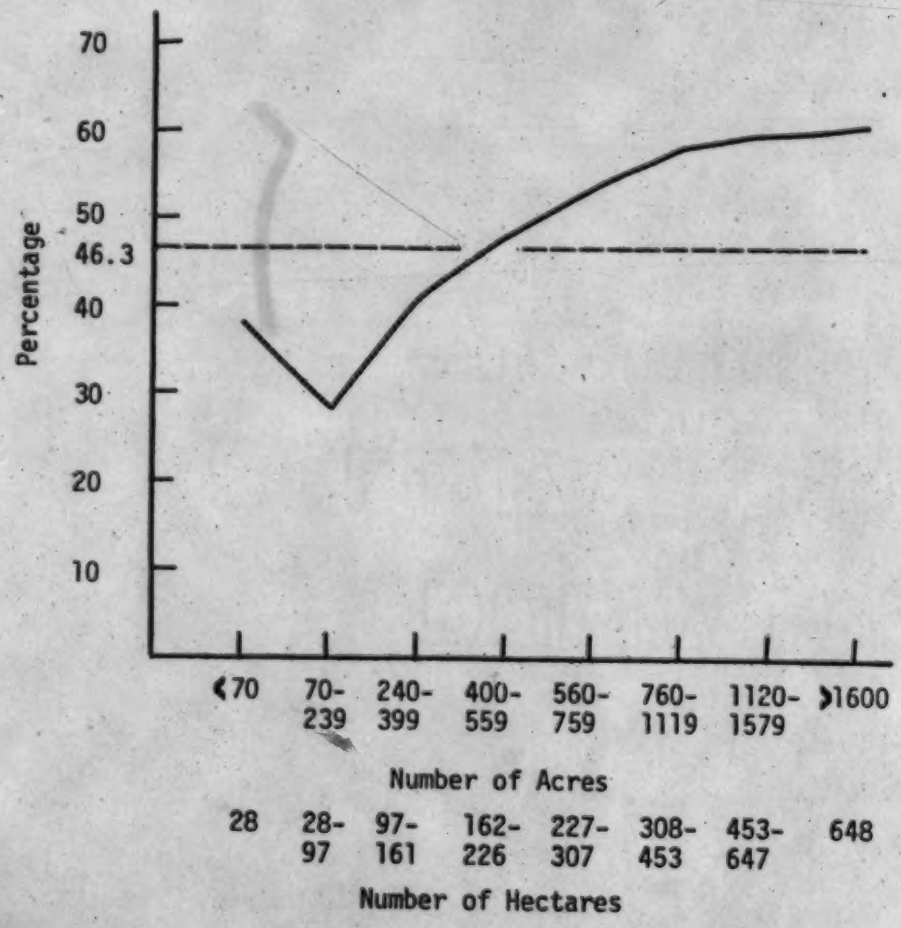
FARM ORGANIZATION AND TENURE IN ALBERTA, 1971

Type of Farm Organization	Number of Farms Operated By			Total Area of Farm		% of Farm Area
	Owner	Tenant	Part-Owner/ Part-Tenant	(acres)	(hectares)	
Private Individual	34,288	3,644	18,665	38,701.272	15 661 862.96	78.1
Partnership	2,109	336	1,987	4,866,604	1 969 446.51	9.8
Institution or Community Pasture	65	97	16	2,123,013	859 153.64	4.3
Incorporated Business By Family Members	618	93	525	2,456,111	993 953.74	5.0
By Others	78	55	50	702,804	284 414.94	1.4
Other Types	35	--	41	656,483	265 669.48	1.3
Total Area of Farm (acres)	17,719,463	3,762,609	28,024,215	49,506,287	20 034 501.26	100.0
(hectares)	(7 170 818.60)	(1 522 675.19)	(11 341 007.47)			
Percent of Farm Area	35.7	7.6	56.6			100.0

SOURCE: Statistics Canada: Alberta Agriculture, 1971.

Figure 9

PERCENTAGE OF PARTLY AND WHOLLY OWNED FARMS THAT CARRY MORTGAGES OR AGREEMENTS FOR SALE DEBT, ALBERTA, 1971



SOURCE: Statistics Canada, Alberta Agriculture, 1971.

Table 9

NUMBER OF PARTLY AND WHOLLY OWNED FARMS
THAT CARRY MORTGAGES OR AGREEMENTS FOR SALE
DEBT, ALBERTA, 1971

Size Groups	Number of Owned Census Farms	Number of Farms Reporting Mortgages or Agreement for Sale Debts
Provincial Total	58,477	27,066
Under 70 acres (28 ha.)	2,915	1,121
70-239 acres (28-97 ha.)	9,650	2,732
240-399 acres (97-161 ha.)	10,879	4,434
400-559 acres (162-226 ha.)	8,635	4,129
560-759 acres (227-307 ha.)	7,781	4,164
760-1119 acres (308-453 ha.)	8,091	4,708
1120-1579 acres (453-647 ha.)	4,558	2,754
1600 acres and over (648 ha.)	5,036	3,024

SOURCE: Statistics Canada: Alberta Agriculture, 1971

greater uncertainty attached to small farm managerial expertise. In that respect, it is interesting to note that the 1971 Census reported that 65 percent of the mortgages and/or agreements for sale are held by government agencies, who publicly encourage family farms.

Socio-Economic Considerations

Observing the general tendencies of ownership and residency, it can be seen that the percent of farms fully-owned has decreased and thus, that the percent of non-resident farms in the province is increasing. Most of these trends can be explained by the decrease in the actual number of farms. As is to be expected with the rise in percent of partly owned farms, there is a corresponding percentage increase in debt. (See Table 10.) Szabo noted that non-residence farms tend to be smaller and that these farms are usually in specialty crops.[15]

Few socio-economic statistics based on tenancy categories are available. The Census reports only on age and part-time work. The age distribution of farm operators mirrors the decrease in farm numbers. The largest number of farm operators is in the 45-54 age category, the largest ownership group.[16] Tenants and part-owners/part-tenants as groups are younger than owners. (See Figure 10, Table 11.)

Of the average total weeks of labour-on-farm reporting, the part-owner/part-tenant had the most, followed by full-owners and tenants. The part-owner/part-tenant reported more male labour while the full-owner reported more female labour (which is likely to be female family labour). The part-owner/part-tenant required more paid

Table 10

TREND OF FARM OWNERSHIP IN ALBERTA, 1931-1971

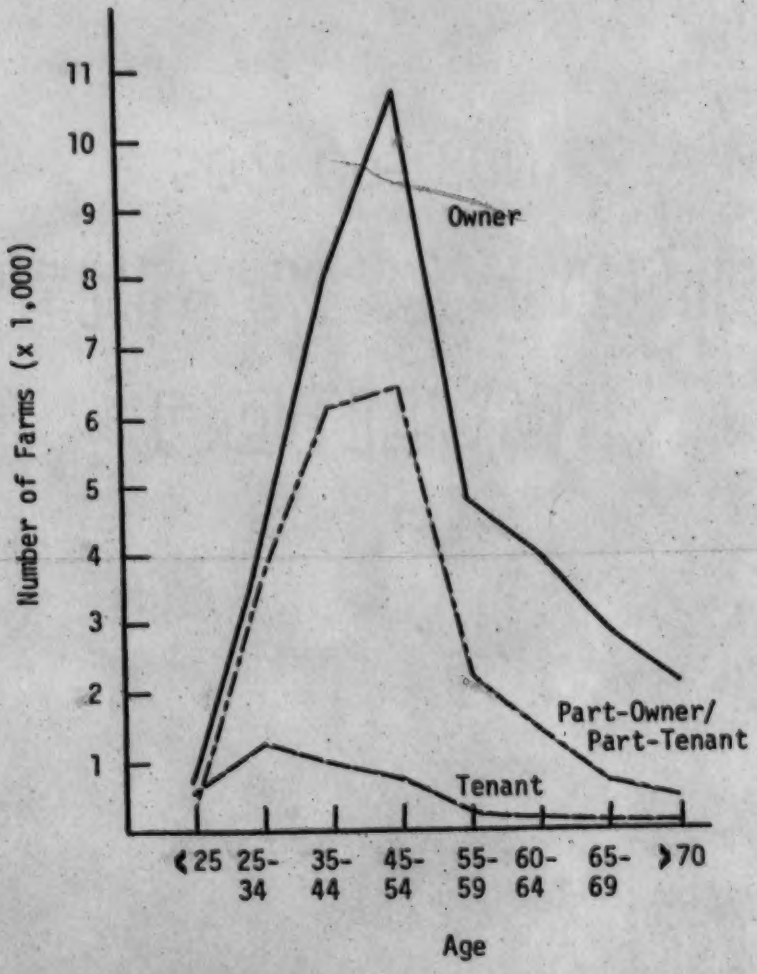
Year	1931	1941	1951	1961	1971
Total number of farms	97,408	99,732	84,315	73,212	62,702
Percent of farms					
a) fully owned	73.0	63.0	63.0	59.5	59.5
b) partly owned	14.9	20.0	25.0	31.0	34.0
Percent of farms reported mortgage and/or agreement for sale	35.9	38.3	25.3	31.1	43.1
Number of Non-resident farms 1/	9,298	9,484	8,311	7,396	7,617
Percent of Non-resident farms in the Province	9.5	9.5	9.9	10.1	12.1

SOURCE: Statistics Canada: Alberta Agriculture, 1971.

1/ Non-resident means anyone who operates a farm and does not live on the property.

FIGURE 10

NUMBER OF ALBERTA FARMS BY OPERATOR'S AGE AND FARM TENANCY TYPE, 1971



SOURCE: Statistics Canada, Alberta Agriculture, 1971.

Table 11

NUMBER OF ALBERTA FARMS BY OPERATOR'S AGE AND FARM TENANCY TYPE, 1971

Age	Total Census Farms	Tenancy Type		
		Owner	Tenant	Part-Owner/ Part-Tenant
Under 25 years	1,591	541	649	401
25 - 34 years	8,915	4,109	1,260	3,546
35 - 44 years	15,088	8,010	967	6,111
45 - 54 years	17,930	10,708	795	6,427
55 - 59 years	7,225	4,782	214	2,229
60 - 64 years	5,684	4,042	178	1,464
65 - 69 years	3,638	2,882	89	667
70 years and over	2,631	2,119	73	439

SOURCE: Statistics Canada: Alberta Agriculture, 1971.

year-round workers as well as less average number of days of off-farm work than the other two categories.[17]

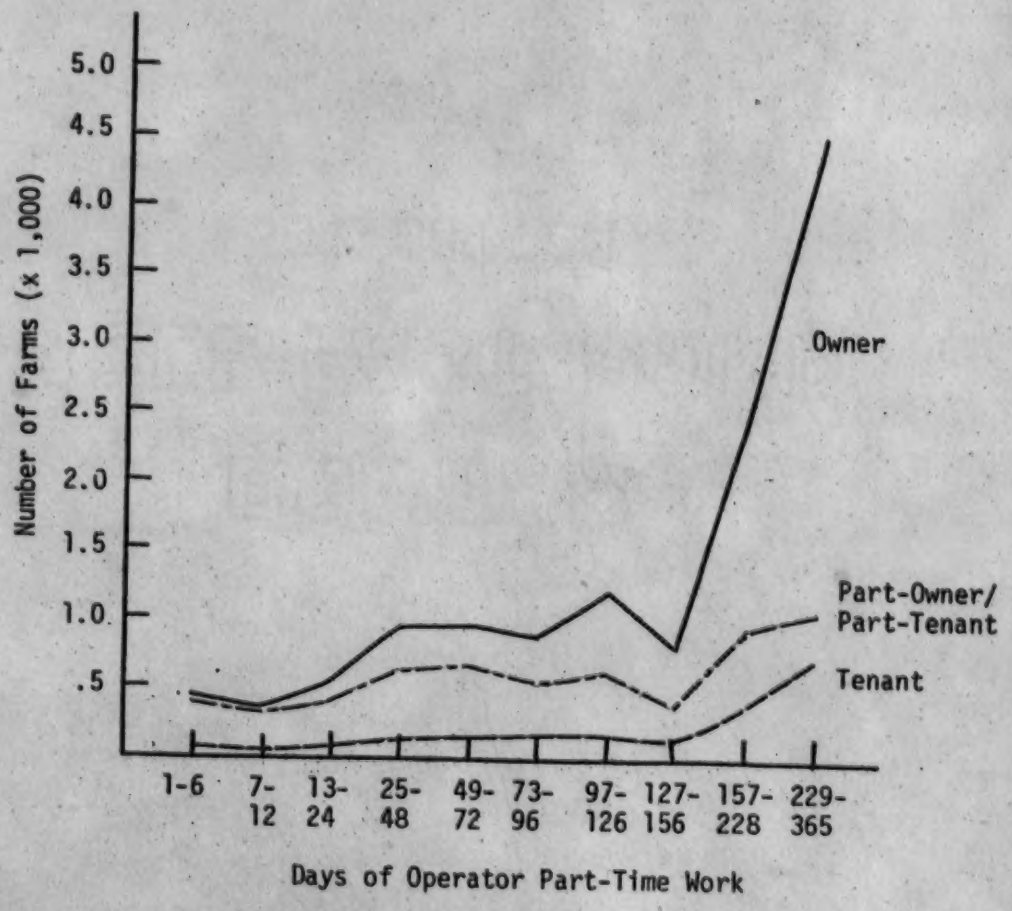
The patterns of off-farm work for all classes of tenure are similar with peaks in distribution at approximately 1-2 months, 4 months and 5-7 months of off-farm work (See Figure 11, Table 12). It is interesting to note that the majority of full-owners and part-owner/part-tenant take off-farm work driving buses/trucks or operating road maintenance equipment, while tenant farmers tend toward logging and agricultural work.[18]

Summary Studies

There have been numerous qualitative studies done in the American and Canadian prairie area. As previously noted, most have not attempted any quantitative, problem-solving analyses. However, the following three studies have done so. Boxley was content to establish a significant correlation between tenure, occupation, and type of ownership to the size of the ownership units.[19] Harman et al in an attempt to rank economic goals found that acres of cropland as well as age, education level, farming experience, number of dependents, level of assets, off-farm income and net worth explained 40 to 50 percent of the variation in goals, but were of limited predictive ability.[20] Kulshreshtha and McGlaughlin tried to evaluate factors which determine financial performance over the long term. They found a positive relation with respect to beginning farm asset levels, an index of opportunity to accumulate, average value of livestock,

Figure 11

NUMBER OF ALBERTA FARMS BY DAYS OF OPERATOR'S PART-TIME WORK AND FARM TENANCY TYPE, 1971



SOURCE: Canada, Alberta Agriculture, 1971.

Table 12

NUMBER OF ALBERTA FARMS BY DAYS OF OPERATOR'S
PART-TIME WORK AND FARM TENANCY TYPE, 1971

Tenure Type	DAYS									
	1-6	7-12	13-24	25-48	49-72	73-96	97-126	127-156	157-228	229-365
Owner	453	359	529	952	954	881	1,205	832	2,460	4,415
Tenant	39	48	87	143	155	160	195	134	363	737
Part-Owner/ Part-Tenant	397	323	412	640	678	541	649	370	958	1,060

SOURCE: Statistics Canada: Alberta Agriculture, 1971

average cultivated area of the farm, proportion of off-farm income and the proportion of the area owned.[21] These results will be used in the hypothesis formulation.

List of Footnotes: Chapter III - Review of Alberta Land Tenure Statistics and Related Literature

1 D. David Moyer, Marshall Harris and Marie B. Harmon, Land Tenure in the United States. Development and Status. (Washington: U.S.D.A., Economic Research Service, Agriculture Bulletin #336, 1969.)

Jacob A. Brown and Robert J. Bens, Farm Tenure in Saskatchewan, An Economic Evaluation of Present Situation and Future Prospects. (Saskatoon: Univ. of Saskatchewan, ARDA Project #27072, 1971.)

2 Ibid.

3 John F. Timmons, "Tenure and Size" in Size, Structure and Future of Farms, edited by A. Gordon Ball and Earl O. Heady (Ames, Iowa: Iowa State University Press, 1972), pages 232-233.

4 M. Wilman, "Changes in Farm Size and Numbers in Canada to 1966" Canadian Farm Economics (October, 1967), pages 21-28.

5 Gottfried Ablasser, Farm Real Estate Sales in the Prairie Province, 1963-67. (Ottawa: Canada Department of Agriculture, Economics Branch, 1969.)

6 R. J. Miller and G. R. White, Rural Real Estate Values in Alberta. January - December, 1971, 1972, 1973, 1974. (Edmonton: Resource Economics Branch, Alberta Agriculture, 1972, 1973, 1974, 1975.)

7 Ibid.

8 Jacob A. Brown and Robert J. Bens, Farm Tenure in Saskatchewan, page 103.

R. A. Stutt, "Changes in Land Use and Organization in the Prairie Area of Saskatchewan during the Period 1951-1966", Canadian Farm Economist, 5 (February, 1971) pages 11-19.

9 Robert F. Boxley, Owner Characteristics and Distribution of Land-ownership in the Eastern Great Plains. (Washington: U.S.D.A. Economic Research Service Bulletin #197, 1964.)

Bruce B. Johnson, Farmland Tenure Patterns in the United States. (Washington: United States Department of Agriculture Economic Research Service, Agricultural Economics Report #249, 1974.)

D. David Moyer et al, Land Tenure in the United States.

10 Hu Harries & Associates Ltd., Future Land Needs for Agriculture, (Edmonton: Alberta Land Use Forum Technical Report #5), 1974, pages 36-37.

M. L. Szabo, "Area Differential Productivity of Agricultural Resources and Off-Farm Migration on the Canadian Prairies", Geographical Bulletin, 8 (1966), pages 113-33.

11 Hu Harries & Associates Ltd., The Future Land Needs for Agriculture, pages 43-44.

12 Timmons, "Tenure and Size", page 237.

13 Diana M. Boylen, The Structure of Alberta Farms, 1941-1974. (Edmonton: Alberta Land Use Forum, Technical Report #11, 1974), page 32.

14 Ibid.

15 M. L. Szabo, "Characteristics of Non-Resident Farm Operations on the Canadian Prairies", Geographical Bulletin, 8 (1966), pages 279-303.

16 Diana M. Boylen, The Structure of Alberta Farms, 1941-1974. page 11.

17 Diana M. Boylen, Rural Land Tenure. (Edmonton: Alberta Land Use Forum, Technical Report #6B, 1974), page 24.

18 Ibid., page 25.

19 Robert F. Boxley, Owner Characteristics and Distribution of Landownership in the Eastern Great Plains.

20 Wyatte L. Harman, Roy E. Hatch, Vernon R. Eidman, An Evaluation of Factors Affecting the Hierarchy of Multiple Goals. (Oklahoma Agricultural Experiment Station, Technical Bulletin T-134, 1972).

21 S. N. Kulshreshtha and Glen R. McGlaughlin, Financial Performance of Prairie Farms: An Economic Evaluation Under a Long-Term Credit Situation. (Saskatoon: University of Saskatchewan. Department of Agricultural Economics, Technical Bulletin BL 72-12, 1972.)

CHAPTER IV

PROPERTY RIGHTS AND THEIR RELATION TO BEHAVIOUR AND ATTITUDE THEORY

Introduction

With regard to property ownership, rights govern behavior. However, Dales has suggested that different rights systems create different incentives, lead to different behavior, display different characteristics and produce different social outcomes.[1] Because the concept of land ownership operates generally within exclusive and transferable rights (price) systems, the method of studying behavior with respect to ownership, to-date, has been to try to define the transaction costs of the system. These include "time and trouble costs" borne directly by individuals using a rights system as well as the "system" costs of creating and enforcing it.[2] As discussed earlier in Chapter II, this has led to very rigid assumptions of the decision-making behavior of the individual. In addition, it has been found that the use of a market price system to reveal or regulate an individual's behavior is inadequate, both in terms of economic activity (as witness, explanatory need for externalities), and of social values and customs.[3]

With regard to the concept of land ownership by government (society), such as land banks or Alberta's Crown lands, rights are non-exclusive and non-transferable (common property). No economic theory of this non-market behaviour has yet been developed.

Dales has commented that the search for good government is the search for some optimum mix of rights systems.[4] What type of right leads to what range of behaviour by the individual or by society? But the concept of land tenure includes not only these political and economic rights but also social responsibilities and privileges. Therefore, it is necessary to have, in addition, some measureable aggregated behavioural variable - attitude.[5] The following sections will discuss the concept of attitude, the relationships between attitude and behaviour, geographical use of attitude theory and the types of attitude measurement which will be used in this thesis.

The Concept of Attitude

Allport, in 1935, proposed the following definition of attitude:

> An attitude is a mental and neural state of readiness, organized through experience, exerting a directive or dynamic influence upon an individual's response to all objects and situations with which it is related.[6]

This definition, as noted by Udell, sees

> attitudes as mental sets which direct an individual's response to a stimulus .... (and) are a psychic summation of knowledge, emotions, motivations, and intentions.[7]

These definitions imply that attitude is a culmination of other behavioural factors and that it has some linkage with the subject's actual response toward an object, and indeed, that it is a precondition of any behaviour with respect to that object. Furthermore, most psychologists agree that attitudes are developed from direct experience with an object or from the integration of several specific responses of a similar type.[8]

It is also important to distinguish attitude from belief as a belief may suggest an attitude; however, an attitude is formed from many beliefs and perceptions.[9] Another term, opinion, while commonly used for both belief and attitude, has been explained as a verbal expression of a disposition or tendency to act in a certain manner and thus, if used by academic study at all, is agreed to be synonymous with attitude.[10]

The Measurement of Attitude and its Relation to Behaviour Prediction

Attitude, as a hypothetical construct that will describe potential human behavior, has two measureable properties - direction and intensity. Direction is defined as positive or negative, depending on the inclination toward or away from the specified object or goal. Intensity or strength is defined as the degree or probability of attaining the object or goal.[11] This has led to the development of numerous types of scales: census of attitudes, social distance, psychophysical.[12]

The most common criticisms of scale development centre around the limiting nature of scale development techniques in describing an individual's mental structure and, because scale analysis is dependent on central tendencies and dispersions of attitudes through a large population, the need for a large population with common attitudes toward the same object.[13]

Since many definitions of attitude imply that there is a predisposition to behave in a particular manner, a large number of studies have tried to establish the relationship between overt behaviour and

attitude. They established the difficulty of measuring attitude-behaviour relationships when the subject felt that a specific attitude or behaviour was expected (studies by Rogers, Stouffer); when the subject expressed public versus private attitudes (studies by LaPiere, Kutner); when the attitude being analyzed was too general or not related to the subject's life goals or expectations.[14] Because many of these studies failed to find a significant relationship between verbal attitudes and behaviour or an explanation of the relationship which would allow prediction, the definition of attitude was further refined.

In studies, such as those by Mann, Insko and Schopler, attitude was conceptualized as having three balanced components - cognitive, affective and conative (behavioural).[15] However, the subsequent discovery of the high inter-dependence between these three components has meant that this attitude definition is now seen to have greater validity as a classification device than as a theoretical construct.[16] Fishbein, in a return to uni-dimensional attitude theory, has stated that attitude scales generally measure only the affective component of an attitude - that part which is derived from a consideration of beliefs and the evaluative aspect of those beliefs. Therefore, in order to explain or predict behaviour, it is necessary to also study the interrelationships between attitudes, and the determinants of behaviour such as beliefs, behavioural intentions, as well as behaviour.[17]

Another aspect of the relationship between attitude and behaviour is that of the relationship between attitude change and behaviour change. It has been assumed by many studies that behaviour change would automatically follow an attitude change. But, when several studies (for example, Janis) found no or slightly inverse relationships

between these variables, it was further argued that supportive environmental change to the new attitude and new behaviour was required.[18] In contradiction, however, it has also been argued using cognitive consistency theory that attitudes will be changed by the individual to bring a behavioural relationship into balance and thus, reduce dissonance. For instance, Festinger's theory of cognitive dissonance argued that people change public attitudes to reduce dissonance perhaps in response to social pressures, whether or not the attitude change has been accepted privately.[19]

In summary, while the relationships between attitude and behaviour, attitude change and behaviour change have yet to be defined explicitly, the use of attitude theory does allow us to include another variable with other social and socio-economic variables in understanding the decision-making processes of the individual.[20]

Geographical Use of Attitude Theory

Behavioural geography is divided between two research viewpoints: one which relates spatial structure as the logical outcome of behavioural actions and the second which tries to define a set of valid statements concerning spatial behaviours in their own right.[21] The latter process-oriented approach argues that in order to understand and thus predict, spatial structures, it is necessary to know about the attitudes, decisions and behaviours which influence the arrangement of phenomena rather than just the positional relations of the phenomena themselves.[22] In addition, this new view argues that an individual's decision to participate will have three interdependent components - psychological (as in the attitude-behaviour complex),

economic (includes variables such as age, income) and geographic (location and orientation in physical space).[23] All three components are necessary in order to explain or predict overt behaviour.

Studies of locational decision-making (or choice behaviour under conditions of risk and uncertainty) in agriculture or industry, such as those by Wolpert, Pred, and Gould, have illustrated the complexity of interlocking motives in decision-making behaviour.[24] The reasons they have identified for non-optimal economic behaviour have included personal mathematical inabilities to compute economic utility maximization; existence of aspiration levels; values which have no economic utility; effect of habit on choice behaviour; influence of role playing and social pressures; effects of social and cultural institutions on choice behaviour; varying degrees of information possessed; and the time frame in which the decision has been made.[25]

However, it was work by Simon, Isard and Dacey, that first identified, for geographers, the value of attitude as a very basic variable in understanding and explaining behaviour.[26] Since then, a few papers have included attitude as an explanatory variable in: environmental policy decisions and resource management (Lowenthal; White; Mitchell); recreation choice patterns (Peterson and Neumann); and consumer shopping behaviour (Murphy; Brown and Fairbairn).[27] But, it would appear that problems with the types of attitudes to be measured, their relationships to overt behaviour, and the methodologies of attitude scale development have discouraged geographers from taking advantage of this explanatory variable.[28]

Attitude Measurement Scales:
Theory and Methodology

The self-reporting measurement techniques of attitude measurement assume "that there will be differences in the belief and opinion reports of the subjects with favourable attitudes toward some psychological object compared to those with unfavourable attitudes".[29] These measurement techniques do not make a direct interpretation of overt behaviour; but instead, assess a subject's attitude score indirectly by examining beliefs and opinions using written tests. Some examples of this type of test are the Thurstone equal appearing interval scale, the Likert summated ratings scale, scalogram analysis developed by Guttman, the semantic differential test developed by Osgood.[30]

If one or more of these self-reporting measurement scales were combined with the use of overt behaviour measurements, greater validity could be obtained in spatial behaviour hypotheses of explanation and prediction. Two types of uni-dimensional attitude measures, suggested by Murphy and Golledge, are the semantic differential and the equal appearing intervals scale.[31] Due to other considerations, which follow, the attitude measurement scales which were used in this thesis were the summated ratings scale and the semantic differential.

i) Likert Scale of Summated Ratings

The attitude scale developed by Likert uses a large number of statements of desired behaviour which can be classified half into favourable and half into unfavourable classes.[32] These statements are given to a group of subjects who respond to each statement in terms of their agreement or disagreement on a five category scale:

strongly agree, agree, undecided, disagree, strongly disagree. The response categories are weighed such that the most favourable attitudes will have the highest positive weight. The attitude score for an individual is the sum of the weights assigned to the category for one or all the statements.

No attempt is made to scale the item statements along an attitude dimension, as in the Thurstone scale. Each item statement may be used as a scale alone or combined together to make up the scale (unlike the Thurstone scale). The scale is designed for internal consistency and reliability.[33]

The primary criticism of the Likert scale is that it does not reflect a unique attitude, as the total score may be derived in different ways; therefore, it is used only for comparative purposes between respondents.[34] Nevertheless, in experiments designed to test the reliability of Likert versus Thurstone scales in attitude measurement, correlations of 0.83 and higher have been found.[35] But with all attitude scales, it is important to realize that they assume that an attitude can be assessed by some counting of the number of pro-or anti-item statements a subject is willing to endorse.[36]

ii) Semantic Differential Technique

This measurement technique, developed by Osgood is a method of observing and measuring the connotative meaning of concepts. It is derived from the belief that people allocate similar meanings to words (or have a common semantic space) and that a measurement of the subject's semantic space with respect to the concept will indicate the meaning of that concept to the individual.[37] The technique assumes

that important cognitive components can be measured by rating a particular concept according to sets of bipolar adjectival scales.[38] Each scale represents a lineal continuum between the two adjectives along which the favourable or unfavourable response is located.

Three factors define semantic space: the evaluative, potency and activity dimentions. Of these the evaluative factor accounts for approximately half to three quarters of the common variance.[39] It is this dimension that Osgood equates with the attitudinal variable.

The semantic differential technique has been frequently used by researchers for its ability to study public reaction to many types of stimuli and because it corresponds to the verbal way in which many people evaluate a concept. However, the main drawback of this technique is that the adjectival sets of scales must be selected in such a way that there is no problem with the respondent's familiarity with the attitude concept being measured or the relevancy and meaning of the adjectives used.[40] A number of studies have investigated scale development methodologies to solve this problem[41]

List of Footnotes: Chapter IV - Property Rights and Their Relation to Behaviour and Attitudes Theory

1 J.H. Dales, "Beyond the Marketplace", Canadian Journal of Economics, 8, 4 (November, 1975), pages 483-503.

2 Ibid.

3 Ibid.

4 Ibid.

5 Peter E. Murphy and Reginald G. Golledge, Comments on the Use of Attitude as a Variable in Urban Geography. Discussion Paper 25, (Columbus: Department of Geography, Ohio State University, 1972).

6 C. Murchison, ed., Handbook of Social Psychology, (Worcester: Clarke University Press, 1935), page 810.

7 J.G. Udell, "Can Attitude Measurement Predict Consumer Behaviour?" Journal of Marketing, 29 (19), pages 46-50.

8 Sheila H. Brown, "Attitudes and Behaviour: A Literature Review", Unpublished Manuscript, University of Alberta, 1972, page 3.

9 Ibid.

M. Fishbein, "Attitudes and the prediction of behaviour" in Readings in Attitude Theory and Measurement, ed. by M. Fishbein, (New York: Wiley, 1967), pages 477-492.

The term perception is used where an actual stimulus is present, whereas beliefs can refer to events not currently present or never experienced.

10 G. Nettles and E.H. Golding, "The measurement of attitudes toward the Japanese in America", American Journal of Sociology, 52 (1947), pages 31-39.

11 G. David Hughes, Attitude Measurement for Marketing Strategies. (Glenview: Scott, Foresman and Company, 1971), page 10.

12 A.L. Edwards, Techniques of Attitude Scale Construction. (New York: Appleton-Century Crofts Inc., 1957).

Census of attitude scales calculate the range and distribution of public attitudes; no analysis of intensity of individual attitude.

Social distance scales are an example of a priori scales which involve rank ordering of preferences by subject on a scale; assumes equal intervals on scale.

Psychophysical scales measure attitudes as the degree of affect for or against the object which is being scales; best known are those developed by Thurstone, Likert, Guttman.

13 Ibid.

14 H.W. Rogers, "Some Attitudes of Students in the R.O.T.C.", Journal of Education Research, 26 (1935), pages 291-306.

S.A. Stouffer, "Experimental Comparison of a Statistical and a Case History Technique of Attitude Research", American Sociological Society Publication, 25 (1934), pages 230-237.

R.T. LaPiere, "Attitudes versus Actions", Social Forces, 13 (1934), pages 230-237.

B.W. Kutner, "Verbal Attitudes and Overt Behaviour involving Racial Prejudice", Journal of Abnormal and Social Psychology, 47 (1952), pages 649-652.

J.M. Tendrich, "A Study of the Association among Verbal Attitudes, Committment and Overt Behaviour in Different Experimental Situations", Social Forces, 45 (1957), pages 347-355.

C.R. Tittle and R.J. Hill, "Attitude Measurement and the Prediction of Behaviour: An Evaluation of Conditions and Measurement Techniques", Sociometry, 30 (1967), pages 199-312.

15 J.H. Mann, "The Relationship between Cognitive, Affective and Behavioural Aspects of Racial Prejudice", Journal of Social Psychology, 49 (1959), pages 223-228.

C.A. Insko and J. Schopler, "Triadic Consistency: A Statement of Affective-Cognitive-Conative Consistency", Psychological Review, 74 (1967), pages 361,376.

16 M. Fishbein, "Attitudes and the Prediction of Behaviour", in Readings in Attitude Theory and Measurement, ed. by M. Fishbein (New York: Wiley, 1967), pages 477-492.

17 Ibid.

Behavioural intentions may be defined as a series of types of interactions in which a subject might engage with object or another person.

18 I. Janis and S. Feshbach, "Effects of Fear-arousing Communications", Journal of Abnormal and Social Psychology, 48 (1953), pages 78-92.

L. Festinger, "Behavioural Support for Opinion Change", Public Opinion Quarterly, 28 (1964), pages 404-417.

19 L. Festinger, A Theory of Cognitive Dissonance, (Evanston: Row, Peterson, 1957).

20 Other social variables might include norms, customs, motivation, perception.

21 R.G. Golledge, L.A. Brown, and Frank Williamson, "Behavioural Approaches in Geography: An Overview", The Australian Geographer, 12, 1 (1972), pages 59-79.

22 Ibid.

S.A. Brown, "Attitudes and Behaviour".

23 Ibid.

24 J. Wolpert, "The Decision Process in a Spatial Context", Annals of the Association of American Geographers, 54 (1964), pages 536-558.

A. Pred, Behaviour and Location, Part 1. Studies in Geography, Series B, 27 (Lund: University of Lund, 1967).

_____, Behaviour and Location, Part 2. Studies in Geography, Series B, 29 (Lund: University of Lund, 1969).

P.R. Gould, "Man Against his Environment: A Game Theoretic Approach", Annals of the Association of American Geographers, 53 (1963), pages 290-297.

25 R.G. Golledge, Behavioural Approaches in Geography".

26 S.H. Brown, "Attitudes and Behaviour".

W. Isard and M.F. Dacey, "On the Projection of Individual Behaviour in Regional Analysis", Journal of Regional Science, 4 (1962), pages 1 - 34, 51-83.

H.A. Simon, Models of Man: Social and Rational, (New York: Wiley), 1957.

27 D. Lowenthal, "Assumptions behind the Public Attitudes", in Environmental Quality in a Growing Economy, ed. by H. Jarrett, (Baltimore: John Hopkins Press, 1966), pages 128-137.

G.F. White, "Formation and Role of Public Attitudes" in Environmental Quality in a Growing Economy, ed. by H. Jarrett, (Baltimore: John Hopkins Press, 1966), pages 105-127.

B. Mitchell, "Behavioural Aspects of Water Management: A Paradigm and a Case Study", Environment and Behaviour, 3 (1971), pages 135-154.

G.L. Peterson and E.S. Neumann, "Modelling and Predicting Human Response to the Visual Recreational Environment", Journal of Leisure Research, 1 (1969), pages 219-237.

P.E. Murphy, "A Study of the Influence of Attitude, as a Behavioural Parameter, on the Spatial Choice Patterns of Consumers", Unpublished PhD. Thesis, (Columbus: Ohio State University, 1970).

Sheila A. Brown and Kenneth J. Fairbairn, An Investigation of Attitude as a Determinant of Consumer Spatial Behaviour: An Edmonton Example, (Edmonton: Faculty of Extension, University of Alberta, 1975).

28 Peter E. Murphy and Reginald G. Golledge, Comments on the Use of Attitude.

Aubrey C. McKennell, "Surveying Attitude Structures: Discussion of Principles and Procedures". Quality and Quantity, 7, 2 (1974), pages 203-293.

29 A.L. Edwards, Techniques of Attitude Scale Construction, (New York: Appleton-Century-Crofts, 1957), pages 10-11.

30 Murphy and Golledge, Comments on the Use of Attitude.

31 Ibid.

32 Allen L. Edwards, Techniques of Attitude Scale Construction, page 149.

Rensis Likert, "The Method of Constructing an Attitude Scale", in Readings in Attitude Theory and Measurement, ed. by Martin Fishbein (New York: John Wiley and Sons, 1967), pages 90-95.

33 Ibid.

34 G. David Hughes, Attitude Measurement for Marketing Strategies.

(Glenview: Scott, Foresman and Company, 1971), page 100.

Nigel Lemon, Attitudes and their Measurement. (London: B.T. Batsford Limited, 1973), page 86.

35 Rensis Likert, "A Technique for the Measurement of Attitudes", in Attitude Measurement, ed. by Gene F. Summers, (Chicago: Rand McNally and Company, 1969), page 156.

Aubrey C. McKennell, "Survey Attitude Structures", page 213.

36 Nigel Lemon, Attitudes and their Measurement, pages 177-178.

37 Murphy and Golledge, Comments on the Use of Attitude.

38 C.E. Osgood, G.J. Suci and P.M. Tannenbaum, The Measurement of Meaning, (Urbana: University of Illinois Press, 1957), page 20.

39 Ibid., page 72.

40 Lemon, Attitudes and their Measurement, page 102.

41 J.C. Nunnally, Tests and Measurement: Assessment and Prediction, (New York: McGraw-Hill, 1959).

R. Downs, "The Cognitive Structure of an Urban Shopping Centre", Environment and Behaviour, 2 (1970), pages 13-39.

R. Lundeen, The Semantic Differential Technique and Personal Construct Theory in Image Measurement. Discussion Paper 5, (Toronto: Department of Geography, York University, 1972).

CHAPTER V

RESEARCH PROBLEM DEFINITION AND PROCEDURES

In the preceding chapters, the existing economic, geographic, and socio-economic data as well as literature concerned with or related to farm land ownership was presented. The reviews of literature in land tenure and property rights (Chapters I and II) have indicated possible explanations for various behaviour patterns with regard to land ownership. Using currently available statistical data from Alberta (Chapter III), the characteristics and relationships of some socio-economic variables to farm land tenure were examined. However, these data were not sufficiently detailed for testing hypotheses explaining the effects of specific socio-economic variables on land tenure characteristics or for investigation of farmers' attitudes toward land ownership in Alberta.

Therefore, the problem was divided into three major areas of research:

1. to determine the characteristics and relationships of specific socio-economic variables with regard to farm land tenure in Alberta by a) further analysis of census data and b) development and analysis of a questionnaire data bank;
2. to examine and compare these findings with those characteristics and/or relationships hypothesized or proven in other areas of North America;

3. to investigate the attitudes of Alberta farmers towards present farm land tenure attributes.

General Characteristics and Relationships; Hypotheses with Respect to Farm Land Tenure in Alberta

Land ownership has been traditionally linked by North Americans to security of tenure and to a high standard of living. Its importance was reflected in the summary of related socio-economic variables from census statistics presented in Chapter III. In addition, while reviewing for potential hypotheses about the relationship of land ownership to specific socio-economic variables and to the development of attitudes and political institutions, the following North American characteristics of land tenure were investigated in the Alberta context:

1. that full owner-operatorship of the farm is becoming a secondary goal, even though it is expressed and perceived by farmers as most important to farming efficiency and productivity;[1]

2. that acquisition is predominately by direct purchase; and that transfer of land holdings to the next generation is a basic land tenure problem;

3. that part-owned/part-rented farms tend to be larger in size (both in acreage and other asset measures) than those which are owner-operated;[2]

4. that with the recent changes in production technology, there has been a shift in the farm firm organization from the private individual to partnership;

5. that rental arrangements are well-established by tradition, and are usually verbal, 1/3-2/3 crop-share "leases"; and that they have too short a time period for long-range planning of efficiency or

productivity improvements;[3]

6. that the majority of landlords renting land are widows of farmers or retired farmers; and that types of assistance from these landlords, if available, is very broad.[4]

Then, based on information from the literature and statistical data review, the following hypotheses were developed and examined:

1) that the greater the acreage of land owned,
   a) the greater the perceived amount of land owned;
   b) the greater the perceived value of on-farm production;
   c) the lower the perceived value of land relative to that of persons renting land;
   d) the higher the age grouping;
   e) the lower the level of formal education.

2) that high scores on a Likert attitude measurement scale based on affinity to land ownership will correlate positively with:
   a) number of acres owned;
   b) percentage of land owned in farm investment;
   c) age grouping of 45-54;
   d) business organization as private individual; and

   negatively with:
   a) number of acres rented;
   b) amount of off-farm income;

3) that an analysis of attitude towards land ownership using the semantic differential technique can identify major dimensions of the attitude and will correlate positively with scores obtained using the Likert attitude measurement scales.[5]

Research Design

i) Sampling Methodology

The province of Alberta was chosen as the region to be sampled in order that the political and legal institutions that most affect land tenure would be similar for all respondents. However, it was realized that local/municipal by-laws and regulations (for example, zoning, taxation) do affect the land market in varying ways throughout the province.

Sample size tables were used to determine that for a population of 100,000 a confidence level of 95 percent, reliability of plus or minus 5 percent, and an expected rate of occurrence of the characteristic being sampled of 50 percent or greater, a sample size of 383 would be necessary, when using simple random sampling techniques.[6] Assuming a response rate of 10 percent to a mailed questionnaire, the sample size of 3,830 was deduced to be necessary.

It was determined that the current (1974) farm vehicle licence plate listing for the province of Alberta would be the most accurate listing of farmers in the province, as the farm licence plate allows them to purchase gasoline and oil at a reduced rate when vehicles are used for farm business; thus, all qualifying farmers use them. The address listings were said to be accurate to that year also. The total listings numbered 117,000 of which 32,000 listings were rejected as duplicates. A five percent random sample of the 85,000 remaining listings was taken (4,250).[7] As there were only 62,702 farmers, as defined by the 1971 census, it was hypothesized that the difference was attributable to 1) several vehicles registered under several different names per farm, 2) vehicles making improper use of farm

classification, 3) more farm vehicle users in 1974 than in 1971, due to increase in small acreage holders, and 4) miscellaneous reasons, such as owner now out of province or deceased. The latter reason accounted for 123 questionnaires returned. In total, 788 questionnaires were returned, a response rate of 19 percent. However, 98 of these were rejected due to incomplete answers, so that the effective response rate was 17 percent.

Because a large percentage (93%) of farm owners and farm part-owners/part-tenants are included in the total number of farm operators, and as all questionnaires returned indicated ownership, chi-square (χ^2) goodness of fit tests were conducted on a Census Division basis to test the similarity of frequencies of other key variables: 1) the number of farms, 2) the age grouping 45-54 of farm operators and 3) individual operatorship to that of the total population. (See Table 13.) As is indicated, the age grouping 45-54 sample frequencies show a good sample fit. A large χ^2 value indicates a poor fit of the data and it can be seen from Table 13, that the sample of farm numbers is based toward farm respondents from Census Divisions 4, 5, 10 and 13. (For reference, see Appendix 3, Map 3.) This could be due to a decline in the number of farms in these areas from the census year 1971 to 1974, which has increased the interest of remaining farmers to land issues.

The variable Individual Type of Operation, has an indicated bias to respondents from Census Divisions 2, 4, 5 and 10. No apparent reason is available for the sample discrepancies in Census Divisions 4, 5 and 10 for both these variables.

TABLE 13

x^2: Goodness of Fit Tests

Number	Number of Farms				Age Grouping: 45-54				Type of Operation: Individual			
Census Division	Total Population	Observed Frequency	Expected Frequency	x^2	Total Population	Observed Frequency	Expected Frequency	x^2	Total Population	Observed Frequency	Expected Frequency	x^2
1	1,962	26	21	1.19	604	8	7	.14	1,775	16	10	3.60
2	4,000	53	43	2.33	1,118	15	13	.30	3,461	32	20	7.20
3	2,042	27	22	1.13	537	10	6	2.67	1,745	13	10	.90
4	1,737	35	19	13.47	604	10	7	1.28	1,532	19	9	11.11
5	3,549	60	39	11.31	1,084	16	12	1.33	3,152	34	18	18.00
6	4,272	59	46	3.67	1,155	15	13	.30	3,672	26	21	1.19
7	4,277	55	46	1.76	1,271	22	14	4.57	3,858	28	22	1.64
8	5,884	82	64	5.06	1,676	28	19	4.26	5,289	33	30	.30
9	1,151	5	13	4.92	325	1	4	2.25	1,051	3	6	1.50
10	8,356	61	91	9.89	2,442	16	28	5.14	7,708	26	44	7.36
11	7,519	60	82	5.90	2,084	17	24	2.04	6,790	28	39	3.10
12	3,466	25	38	4.44	1,068	7	12	1.33	3,187	12	18	2.00
13	5,978	44	65	6.78	1,673	14	19	1.31	5,442	21	31	3.22
14	942	12	10	.40	262	4	3	.33	871	5	5	0
15	8,398	81	91	1.09	2,259	23	26	.35	7,828	32	45	3.75
	63,533	690		73.34	18,162	206		27.60	57,361	328		64.87

for 14 degrees of freedom

$x^2_{.05} = 23.685$

$x^2_{.01} = 29.141$

ii) Questionnaire Design

Because of the recent wide-spread interest in land use and ownership in Alberta, it was decided that a large mail questionnaire survey would not only give a more representative data bank of socio-economic and attitudinal variables than a small personal interview survey, but also would have a fairly high rate of return that would tend to eliminate non-respondent bias. Both a pre-test and the actual questionnaire were developed with format, colour, mailing time of year suggestions that survey researchers have found effective.[8] Both questionnaires featured an introductory letter, stamped return envelope and were followed with two reminder cards. (See Appendix 3 for Introductory Letter, Questionnaire and Reminder Card.)

The questionnaire was divided into five sections. Three sections were to be answered by all respondents: Section A was the Likert attitude measurement scale; Section B was the semantic differential scale; and Section E was a general section for recommendations and comments. Section C was answered by all respondents who owned land in 1973-1974, while Section D was answered by all respondents who rented land during that time period. The questionnaire was pre-tested on colleagues in the Department of Geography, Alberta Department of Agriculture and Alberta Land Use Forum. Then, a sample of fifty farmers, had copies of the questionnaire mailed to them. They were later interviewed by telephone for comment on format, clarity of questions and any other concerns arising from the questionnaire. The major change recommended was a switch from an introductory explanation of the semantic differential scale to the brief instruction used as most farmers considered it unnecessary and "too time consuming to

figure out". Unfortunately, it was later discovered that such a change did not increase understanding of the type of response requested - only 328 (48%) of the responses were useable.

Research Design and Analyses

The returned questionnaires were coded for computer processing. A summary of the answers received is included in Appendix 3, and will be discussed in the following analyses.

i) Section A: Likert Attitude Measurement Scale

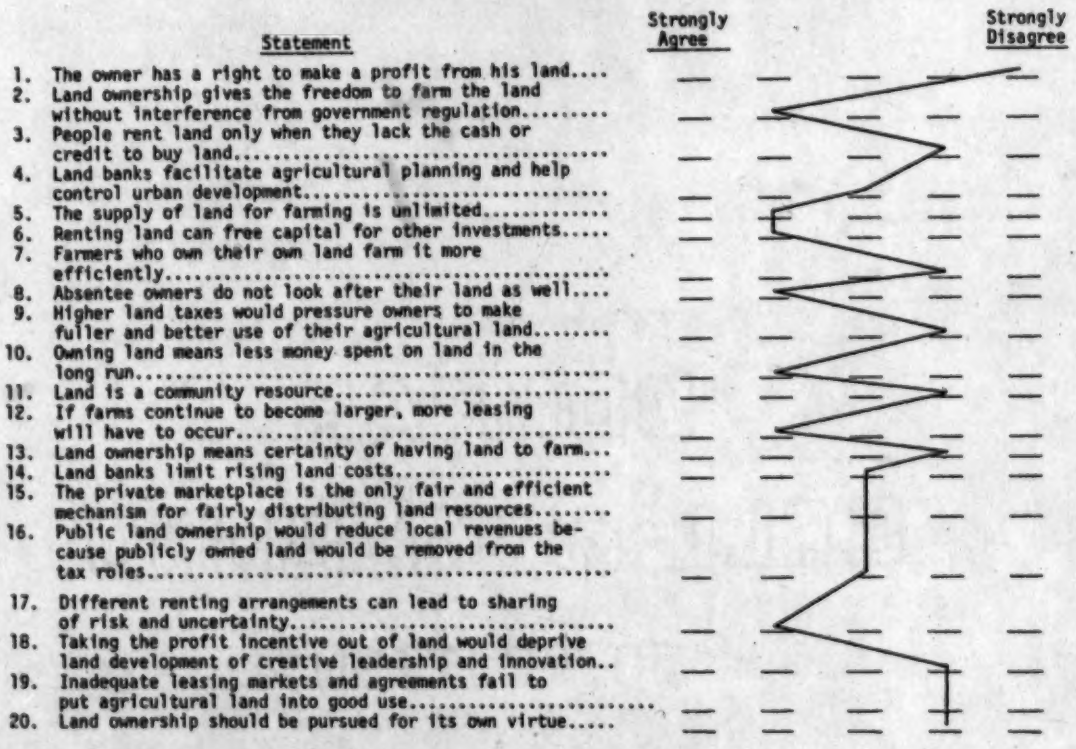
The Likert attitude scale was developed according to the methodology of Edwards and Likert.[9] Twenty attitude statements, half favourable to the concept of land ownership and half not favourable, were developed by using the land tenure literature, popular farm magazines such as Country Guide, The Canadian Cattleman, and radio phone-in shows monitored over a six month period. The resulting scale is shown in Figure 12 and the corrected numerical values are shown in Appendix 3. Attitude statements which were considered favourable were numbered 1, 2, 5, 7, 10, 13, 15, 18, 19, 20. Using the 22 returned pre-test questionnaires, the scale was checked for split-half reliability or the criterion of internal consistency, and a positive correlation expressed by rho(ρ) of 0.74 was obtained, at the level of significance .005.[10] Therefore, each attitude statement item as well as the total scale can be used as an attitude measurement.[11]

The scores for attitude statements reflecting issues concerning the freedom of ownership (2, 5, 9, 10, 11, 13), leasing (3, 6, 12,

FIGURE 12

Likert Attitude Statement Scale:

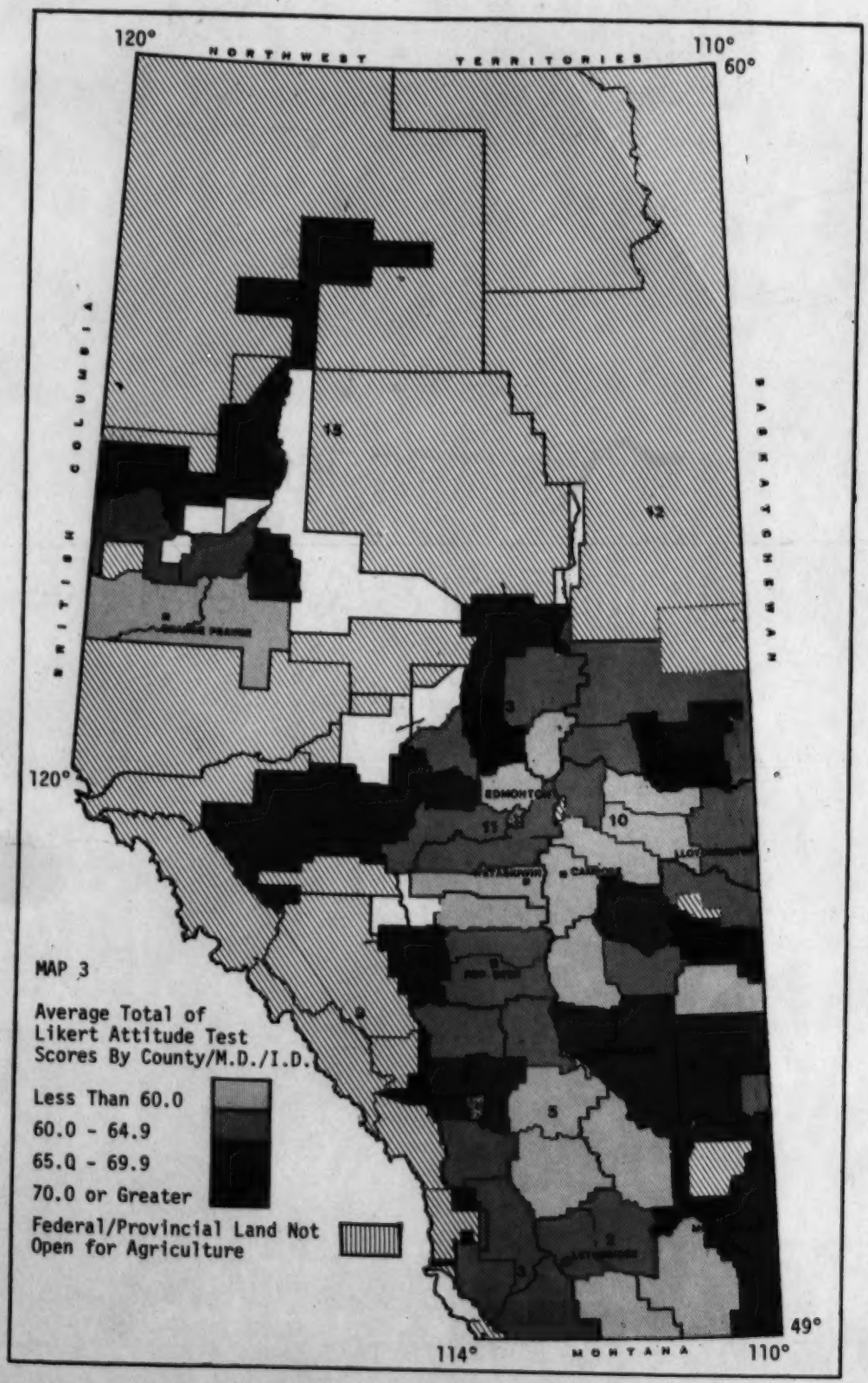
Land Ownership


Statement
Strongly Agree
Strongly Disagree
1. The owner has a right to make a profit from his land....
2. Land ownership gives the freedom to farm the land without interference from government regulation.....
3. People rent land only when they lack the cash or credit to buy land.....
4. Land banks facilitate agricultural planning and help control urban development.....
5. The supply of land for farming is unlimited.....
6. Renting land can free capital for other investments.....
7. Farmers who own their own land farm it more efficiently.....
8. Absentee owners do not look after their land as well....
9. Higher land taxes would pressure owners to make fuller and better use of their agricultural land.....
10. Owning land means less money spent on land in the long run.....
11. Land is a community resource.....
12. If farms continue to become larger, more leasing will have to occur.....
13. Land ownership means certainty of having land to farm...
14. Land banks limit rising land costs.....
15. The private marketplace is the only fair and efficient mechanism for fairly distributing land resources.....
16. Public land ownership would reduce local revenues because publicly owned land would be removed from the tax roles.....
17. Different renting arrangements can lead to sharing of risk and uncertainty.....
18. Taking the profit incentive out of land would deprive land development of creative leadership and innovation..
19. Inadequate leasing markets and agreements fail to put agricultural land into good use.....
20. Land ownership should be pursued for its own virtue.....

17, 19), and efficiency (7, 8) aspects were predictable from the preceding literature review. Most surprising were the scores for statement 1, which would indicate a socialistic philosophy; this is also reflected in statements 18 and 20. Attitude statements which included planning mechanisms such as land banks or tax structures were scored as undecided.

The average total of Likert attitude scores for each County, Municipal and Improvement Districts and Special Areas were mapped. (See Map 3.) The higher score indicates a more favourable attitude to the land ownership concept. Municipalities where scores are less than 60.0 might be partially explained as those that have: 1) government ownership of large land tracts (County 2, 4, 5), that is where acreage ownership can not be increased; or 2) escalating land values due to urban influences where an acreage increase may not be economical.[12]

There appears to be no common factor for the very high scores that occur for M.D. 92, M.D. 52, County 19 and I.D. 8. A correlation coefficient (r) of -0.29 at the .025 level of significance was calculated between the number of acres owned per owner and the Likert attitude score on a municipalities basis. This low correlation does reflect the above comments, as some owners with smaller amounts of owned land or limited ability to expand, would tend to have larger attitude scores possibly expressing a desire for more owned land than in land ownership per se.


120°
NORTHWEST TERRITORIES
110°
60°
BRITISH COLUMBIA
SASKATCHEWAN
13
12
EDMONTON
11
10
120°
MAP 3
Average Total of
Likert Attitude Test
Scores By County/M.D./I.D.
Less Than 60.0
60.0 - 64.9
65.0 - 69.9
70.0 or Greater
Federal/Provincial Land Not
Open for Agriculture
49°
114°
MONTANA
110°

ii) Section B: Differential Measurement Scale

The semantic differential scale was developed using the methodology initially developed by Osgood.[13] As this technique assumes that important cognitive components of a concept can be measured by sets of bipolar adjectival scales, it is important to devise appropriate scales that will measure attitudes. Unfortunately, while studies have used word lists, unstructured conversations, and literature searches, no definitive method has been developed which will insure relevancy.[14] As in the Likert measurement scale development, use was made of the academic and popular literature as well as phone-in radio shows to develop adjective scales. These were discussed with respondents to the pre-test questionnaire, who corroborated the adjectives being used, as well as whether the favourable or unfavourable pole being used was correct.

As each scale represents a continuum between the two adjectives, favourable or unfavourable reponses to the stimulus are shown by the location of the response on an interval scale. Studies by Stagner and Osgood have determined that a seven step interval is preferable.[15] The favourable pole of the scale was scored as 7, the unfavourable pole as 1, with 4 being a neutral score. The summated scale scores are presented in the Questionnaire Summary in Appendix 3. The mean attitude scores are presented graphically in Figure 13. Attitude scores ranged from 2.04 to 4.61, with a total mean score of 3.68. This low attitude mean score may be indicative of a negative attitude towards land ownership generally. The attitude score means, as well as the standard deviations for the 16 scales are shown in Table 14.

FIGURE 13

SEMANTIC DIFFERENTIAL MEASUREMENT SCALE

SCORE MEANS: LAND OWNERSHIP

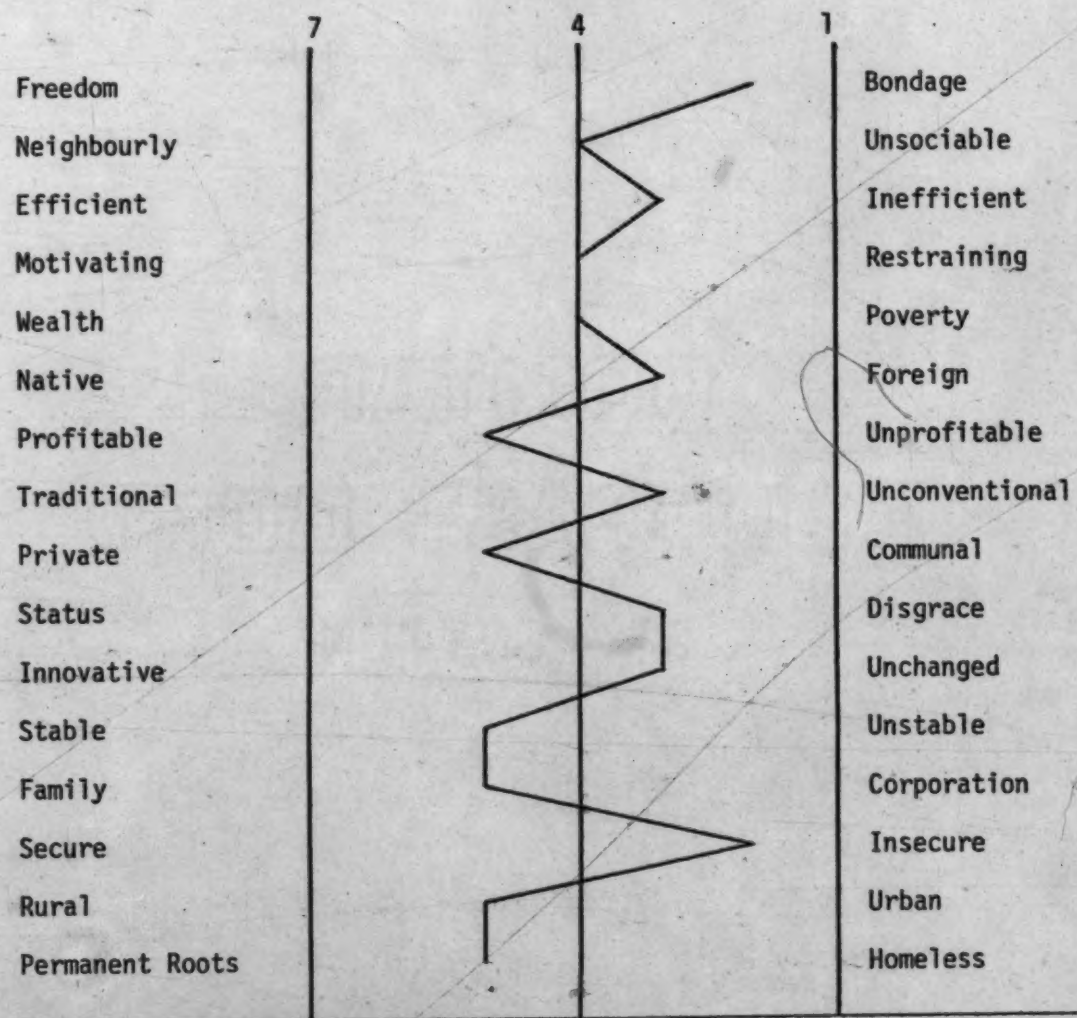


TABLE 14

MEAN AND STANDARD DEVIATION OF SEMANTIC DIFFERENTIAL ATTITUDE SCALES

	Mean	Standard Deviation
Freedom-Bondage	2.04	0.65
Neighbourly-Unsociable	4.34	0.32
Efficient-Inefficient	2.39	0.41
Motivating-Restraining	4.30	0.32
Wealth-Poverty	4.34	0.32
Native-Foreign	2.94	0.45
Profitable-Unprofitable	4.44	0.45
Traditional-Unconventional	2.96	0.45
Private-Communal	4.51	0.55
Status-Disgrace	2.79	0.63
Innovative-Unchanged	2.97	0.45
Stable-Unstable	4.60	0.71
Family-Corporation	4.56	0.63
Secure-Insecure	2.6	0.02
Rural-Urban	4.57	0.55
Permanent Roots-Homeless	4.61	0.71

The responses on each semantic differential scale were then correlated with responses to all other scales to form an interscale correlation matrix for testing the internal validity of the scale and for use as the data input for factor analysis.

Factor analysis is a method which is used to analyze a set of observations for intercorrelations, where the variables may be correlated with more than one common factor; and thus, the set of data can be explained in terms of a smaller number of reference variables. The factor analysis output is a set of factors that account for a large proportion of the common variance and the correlations of each of the original measuring scales with these factors.[16]

An image analysis was performed with orthogonal rotation to give a set of independent factors.[17] Factors were interpreted by considering factor loadings greater than 0.35. A summary of the results is included in Appendix 3. It was discovered that some attitude variables (such as permanent roots, rural) loaded high on two factors while another attitude variable (wealth) loaded at greater than one. Thus, these attitude variables are measuring more than one theoretical dimension, and a differentiation of factors is not possible.[18]

Therefore, it would appear that a concept such as land ownership may not have adjectives with unique dimensions that will describe it exclusively; that is, land ownership per se is not specific enough an activity for this analysis technique. Because of this result, no correlations were attempted with the Likert attitude measurement scale.

iii) Section C, D, E: Analyses of Socio-Economic Variables

These sections of the questionnaire were designed to provide descriptive socio-economic data that could be used to compare characteristics of farm land tenure in Alberta with those found elsewhere as well as relevant respondent statistics that could be correlated with attitude statements. A complete summary of the answers obtained is included in Appendix 3.

The main value products produced by respondents were beef (56.3%); wheat (26.3%); small grains (24.4%); and pasture/forage (25.4%), which is the typical product mix in Alberta agriculture. The respondents tended to own less acreage (average group was 240-399 acres; 97-161 hectares) than the census average for either full owners or part-owners/part-renters. The estimated average market values for farmland, both that owned and rented, were approximately one hundred dollars higher per acre than that calculated by Alberta Agriculture for the 1974-1975 year. In addition, farmers estimated that 53.9% of capital investment on the farm was taken by land (44.5% in mortgages; 9.4% in rent). Most respondents indicated on-farm residence (84.2%) with the acreage farmed unchanged from the previous year (76.6%).

Approximately half of the farm businesses were operated as private individual (49.0%), while husband-wife partnerships and family corporations accounted for 37.4%; this is comparable with provincial census statistics which show an increasing trend away from individual operatorship. This respondent sample may have been atypical in that 47.5% of farm net income was from off-farm sources, which is higher than the provincial average (36%).[19]

The social variables corresponded generally with census statistics. Most of the respondents were in the 35-54 year age groupings (52.9%), had grown up (89.8%) and farmed for those many years in the same location. The formal education level was Grades 6-10 (48.7%); additional experience in other areas outside Alberta was claimed by 35 percent of the sample. Both the identifiable ethnic heritage mix as well as the proportions of family in rural and urban areas reflect general knowledge.

Land was owned by the husband solely (41.9%) or in joint husband-wife ownership (36.9%). It was purchased by 76.4% of the owners, rather than obtained by homestead (7.9%) or inheritance (13.3%) - also an increasing trend elsewhere. Most (61.6%) stated that it would have been impossible to rent rather than purchase the land parcel last purchased.

Approximately half of the respondents (48.6%) farmed detached land parcels away from the farmstead. Of these farmers, 66 percent had land zero to five miles (0-2 kilometres) away, 17.7% had land six to ten miles away (10-16 kilometres) and 15.6% had land ten miles or more (16 kilometres) away. In the latter two categories, the farmer was located near a city (Edmonton, Leduc, Wetaskiwin, Lloydminster) or in marginal farming areas in the extreme south-east, south-west and Peace River district areas. Distance from farmstead did not appear to affect land use, as much as soil, topography, climate.

Only 9.0% of the owners rented some of their land out, usually for crop production (76.1%). They reported that the leasee farmed the land as well or as efficiently as they would have done (80.7%).

Most of the leases (56.9%) that were reported were for private cultivated land, followed by 13.3 percent for pasture and 10.3 percent for grazing. No respondents reported public grazing leases. A large percentage of the agreements were written (55.4%), with 35.6 percent being 1/3-2/3 crop-share and 43.7 percent being straight cash. Only 1/3 of the leases reported included shared costs between landlord and tenant, and most respondents (83.3%) felt that shared costs would have no effect on farming practices. Land use practices on owned and rented land were reported to be similar.

Most respondents preferred crop-share leases (49.6%) as a method of spreading risk and uncertainty, while a minority (39.1%) liked the freedom of decision-making opportunities under a straight cash lease. Flexible cash-leases or cash-share leases, although reflecting product market prices, were not used. A large number of respondents preferred one to five year leases (44.9%) stating as reasons allowance for change and easier bookkeeping of costs. The rest of the respondents preferred intermediate or long term leases (28.5%; 26.6%) citing longer planning horizons and return on investment. These results are similar to a recent Alberta leasing study.[20]

Many farmers did not receive any advice when making a lease agreement (37.8%); a small number consulted with family (17.3%), with government extension personnel (11.5%) and with written materials, such as magazines, textbooks (15.2%). Type of negotiation was split between owner's request, leasee's request and mutual agreement.

Leasees characterized their landlords as private individuals (59.9%) who they had generally known all their life (48.6%) and who

might be an older relative (35.7%). Most of the landlords had farmed the land (50.8%) and were renting to only one leasee (78.6%). Only a few landlords had been involved with credit or loans for the leasee (18.9%). About 1/3 of the landlords lived on a farm while 63.8 percent lived in an urban community; most of the leased property (82.8%) was within one hundred miles (160 kilometres) of the owner's residence.

Some of these socio-economic variables were then tested against number of acres owned and also acres rented to see if a systematic relationship existed. Cramer's V was the test used to measure the strength of relationship, as it makes a correction for the fact that the value of chi-square (χ^2) is directly proportional to the number of cases involved.[21] (See Table 15.)

It would appear that there is a stronger measure of association between acres rented and the percentage of farm investment required than between acres owned and the investment required. This differs from the reported perceived investment of farmers to land holdings. Measures of association between different sources of income and acreage owned or rented are comparable. Measures of association are higher between cash crops (wheat, oilseed) and acreage owned as well as between pasture crops and acreage rented. There is a higher measure of association between number of years farmed with father for acreage rented than acreage owned, which is probably reflecting intergeneration transfer.

This statistical test was also used for determining a measure of the strength of the relationship between the Likert attitude scale scores favourable to land ownership and acreage owned (V = 0.33); acreage rented (V = 0.35); percent of perceived farm investment - land

TABLE 15

CRAMER'S *V*: ASSOCIATIONS BETWEEN ACREAGE (OWNED/RENTED) WITH SOCIO-ECONOMIC VARIABLES

	Acreage Owned	Acreage Rented
Percentage of Farm Investment-Land Owned	.34	
-Land Rented		.50
Source of Income		
-Farm Production	.29	.31
-Off-Farm-Operator	.47	.52
-Family	.54	.67
Type of Production		
-Beef	.21	.22
-Dairy	.21	.15
-Hogs	.13	.15
-Wheat	.29	.24
-Oilseed	.28	.18
-Small Grains	.22	.22
-Pasture and Forage	.15	.31
No. of Years Farmed With Father	.33	.44
Age	.12	.18

owned (V = 0.17) and percent of perceived farm investment - land rented (V = 0.30). These results appear to substantiate the evidence from other areas and seen in the literature, that full farm owner-operatorship is still considered to be a primary goal.

In Section E, all farm respondents were asked to give recommendations for easing the present shortage and/or the high cost of agricultural land, in order to facilitate farm land ownership. (See Summary of Questionnaire, Appendix 3.) The most frequent suggestion (38%) was to control subdivision of agricultural land and to restrict its use to farmers. Other suggestions however, indicated that there was no problem (11%) in land availability or cost but rather in farm credit (9%), product marketing (10%) or social-extension information (9%) institutions.

List of Footnotes: Chapter V - Research Problem Definition, Procedures and Analyses

1 Eirik G. Furubotn and Svetozar Pejovich, "Property Rights and Economic Theory: A Survey of the Recent Literature", Journal of Economic Literature, 10 (1972), pages 1137-1162.

2 A.B. Andarawewa, "Tenure Patterns and the Commercialization of Canadian Agriculture", Canadian Journal of Agricultural Economics, 17, 1 (February, 1969), pages 110-120.

3 J.C. Gilson, Economic Aspects of Tenant-Operated Farms in south-western Manitoba, (Research Report, Winnipeg: University of Manitoba, 1960).

4 Many of these characteristics have been mentioned numerous times by other authors; perhaps, the best summary related to prairie agriculture is:

Jacob A. Brown and Robert J. Bens, Farm Tenure in Saskatchewan, (Saskatoon: University of Saskatchewan, A.R.D.A. Project # 27072, 1971).

5 C.R. Tittle and R.J. Hill, "Attitude Measurement and Prediction of Behaviour: An Evaluation of Conditions and Measurement Techniques", Sociometry, 30 (1967), page 475.

6 Herbert Arkin and Raymond R. Colton, Tables for Statisticians, 2nd ed., (New York: Harper and Row, 1963), page 145.

7 The access to this computerized listing of farm vehicle plate listings for this study was approved by H.R. Copithorne, Minister, Alberta Department of Highways.

C. Shier, Department of Rural Economy, University of Alberta was responsible for the sorting, listing and simple random sampling programmes.

8 A.N. Oppenheim, Questionnaire Design and Attitude Measurement, (New York: Basic Books, Inc., 1966).

C. Jahoda Selltiz, M. Deutsch and S. Cook, Research Methods in Social Relations, (New York: Holt, Reinhart and Winston, 1966).

W.J. Collin and R.S. Gawreluck, "Some Considerations in the Use of Mail Questionnaires in Social Science Research", Unpublished Manuscript, (Edmonton: Department of Education, University of Alberta, 1971).

Thomas L. Burton and Gordon E. Cherry, Social Research Techniques for Planners, (London: George Allen and Unwin Limited, 1970).

Rueben C. Buse, "Increasing Response Rates in Mailed Questionnaires", American Journal of Agricultural Economics, 55, 3 (August, 1973), pages 503-508.

Georgia Zannaras, "Survey Research: The Questionnaire", unpublished manuscript, (Columbus: Department of Geography, Ohio State University, 1970).

9 Allan L. Edwards, Techniques of Attitude Scale Construction, (New York: Appleton-Century-Crofts, 1957), pages 149-171.

Rensis Likert, "A Technique for the Measurement of Attitudes" in Attitude Measurement, ed. by Gene F. Summers, (Chicago: Rand McNally and Company, 1969), pages 149-158.

Rensis Likert, "The Method of Constructing an Attitude Scale", in Readings in Attitude Theory and Measurement, ed. by Martin Fishbein, (New York: John Wiley and Sons, Limited, 1966).

10 Rensis Likert, "A Technique for the Measurement of Attitudes", pages 91, 95.

11 Ibid.

John B. Lansing and James N. Morgan, Economic Survey Methods, (Ann Arbor: Institute for Social Research, University of Michigan, 1971), page 280.

12 Diana M. Boylen, Rural Land Tenure, (Edmonton: Alberta Land Use Forum, 1975).

13 C.E. Osgood, G.J. Suci and P.H. Tannenbaum, The Measurement of Meaning, (Urbana: University of Illinois Press, 1957).

14 J.C. Nunnally, Tests and Measurement: Assessment and Prediction, (New York: McGraw-Hill, 1959).

R. Downs, "The Cognitive Structure of an Urban Shopping Centre", Environment and Behaviour, 2 (1970), pages 13-39.

G.H. Winkel, "The Role of Personality Differences in Judgments of Roadside Quality", Environment and Behaviour, 1, 2 (1969), pages 199-223.

15 R. Stagner and C.E. Osgood, "Impact of War on a Nationalistic Frame of Reference", Journal of Social Psychology- 24 (1946),

pages 187-215.

16 Sheila A. Brown and Kenneth J. Fairbairn, An Investigation of Attitude as a Determination of Consumer Spatial Behaviour: An Edmonton Example, (Edmonton: University of Alberta, 1975), pages 47-59.

L.L. Thurstone, Multiple Factor Analysis, (Chicago: University of Chicago, 1947).

R.J. Rummel, Applied Factor Analysis, (Evanston: Northwestern University Press, 1970).

17 Ibid.

The program used was the Alberta General Factor Analysis Program, Division of Educational Research Services, University of Alberta, August, 1973.

18 Jae-On Kim, "Factor Analysis", in Statistical Package for the Social Sciences, ed. by Norman H. Nie, (New York: McGraw-Hill Book Company, 1975), pages 468-513.

19 Statistics Canada: Cross-Classified Socio-Economic Characteristics of Farm Operators, 1971.

20 G. McAfee, A. Ford and D. Boylen, Agricultural Leasing, (Edmonton: Farm Management Branch, Alberta Agriculture, 1974).

21 $$V = \left(\frac{\phi^2}{\min(r-1), (c-1)} \right)^{1/2}$$

V ranges from 0 to +1; a large value signifies only that a high degree of association exists.

Hubert M. Blalock, Social Statistics, 2nd ed., (New York: McGraw-Hill, 1972).

CHAPTER VI

SUMMARY AND CONCLUSIONS

This study identified major social and economic characteristics and relationships which have been found to affect or be affected by land tenure institutions. These characteristics and relationships were then investigated in the Alberta farm land tenure context.

Major trends in the land tenure system which had previously been identified, were established for Alberta. One trend was that part-owner/part-tenant operatorship is increasing both in number and size of farm operated, even though attitudes of farmers still link income, living standards and status with full owner-operatorship. This was substantiated by direct questions on the mail questionnaire as well as scores obtained by using the Likert attitude scale which measured attitudes favourable to land ownership. In addition, farm respondents who were renting property appeared to have a higher awareness of land investment required.

Using the questionnaire data, it was also seen that although most property transfers are now by direct purchase, rather than inheritance or homesteading, farmers were spending a greater number of years renting land from relatives, presumably before all land for the farm management unit was purchased. This trend might explain the high proportion of off-farm work, both by the operator and his family.

Despite the efforts of the information media and government extension personnel, both the traditional type of farm operatorship (individual-type) and rental arrangements (1/3-2/3 crop share and cash

leases) appear to be changing very slowly, if at all.

Two problems in data hampered this analysis. Census statistics did not differentiate the proportions of land that were rented or owned by part-owner/part-tenant; and thus, it was not possible to determine farm size and structure of this category for comparative purposes. No full tenants answered the survey questionnaire. In addition, only several questionnaires were answered by those farmers holding public grazing leases, farm members of Hutterite colonies and native farmers on reserve or colony land.

One of the purposes for attitude measurement was to try to explain, even predict, behaviour or behaviour change. In the context of land ownership, it would enable planners and legislators to understand attitudes of the general population towards land ownership and what effects any planned changes (or lack of same) would have on social, economic, political and legal institutions. Thus, it was interesting to find that three attitude statement items in the Likert scale indicated socialistic rather than capitalistic philosophies of land ownership. Other attitude statements relating to freedom of ownership (decision-making), leasing and efficiency scored favourable or unfavourable as predicted by the literature. In addition, the statements related to planning mechanisms, such as land banks or tax structure, were scored undecided. It was also found that owners with smaller amounts of owned land or limited ability to expand (due to physical or economic constraints) tended to have larger attitude scores, thus possibly expressing a desire for more owned land than in land ownership per se.

This attitude scale measurement is not sufficient evidence for more government intervention in planning and control of land ownership and use, but the occurrence of high scores on several attitude statements indicating socialistic land tenure philosophies, may indicate a predilection for government involvement in the areas of expanded land availability and controlled land prices.

It was also indicated by answers in Section E that farm people are currently not aware of potential planning mechanisms which could be used. This was seen in the large numbers who favoured only land use zoning. Those people who answered that there were no problems associated with land ownership, indicated a need for increased government involvement in product marketing boards and public credit institutions. It would thus appear that more extension work is needed in the areas of land use planning and ownership by government and farm organizations before any new policy planning or legal structures are introduced.

It was anticipated that the semantic differential measurement technique could be used to corroborate the findings of the Likert attitude scales; however, the nature of the test does not appear to be suitable for mail questionnaires. It is also possible that the concept of land ownership is too complex for measurement by this test.

Not included in the analysis of this thesis were the attempts to define a regression equation using land ownership as the dependent variable and a decision-making matrix of attitudinal and socio-economic variables, as the independent component. High multicollinearity between the variables inhibited variable definition. This may be an area for future research.

Several different types of tenure forms are currently being tried in North America and should be further investigated. These include vertical and horizontal integration, custom farming, production co-operatives, corporate farming, land pooling and restraints on farm size. These forms of tenancy are being used in conjunction with or as substitutes for the traditional forms of tenancy - full owners, part-owner and tenant.

Ultimately, however, any system of landed property rights, in North America both now or in the future, will have to be further developed in terms of the major principles affecting land tenure - efficiency and productivity, equitability, privacy and freedom.

SELECTED BIBLIOGRAPHY

I Land Tenure; Land Reform; General

1. ACKERMAN J. and HARRIS, M., ed. Family Farm Policy. Chicago: University of Chicago Press, 1946.

2. ADAMS, DALE W. "The Economics of Land Reform". Food Research Institute Studies, 12, 1973: 133-138.

3. BARLOWE, RALEIGH. Land Resource Economics. The Economics of Real Property. 2nd ed. Englewood Cliffs: Prentice-Hall, 1972.

4. _____. "The Function of Governmental Agencies in Developing Land Use Policies". In: Proceedings of a Seminar on the Economic Aspects of Land Use. Guelph: Ontario Agricultural College, 1957.

5. BARLOWE, RALEIGH and LIBBY, LAWRENCE W. Policy Choices Affecting Access to Farmland. Special Publication 27. University of Illinois Agricultural College (August 1972): 23-28.

6. BLASE, MELVIN G., ed. Institutions in Agricultural Development. Ames: Iowa State University Press, 1971.

7. BLOCK, WILLIAM J. Rural Zoning. People, Property and Public Policy. Fargo: Co-operative Extension Service, North Dakota State University, Extension Bulletin 23, 1974.

8. BOSERUP, ESTER. The Conditions of Agricultural Growth. The The Economics of Agrarian Change under Population Pressure. Chicago: Aldine Publishing Company, 1965.

9. BOSSELMAN, FRED and COLLIES, DAVID. The Quiet Revolution in Land Use Control. Washington: Council on Environmental Quality, 1971.

10. BREWSTER, JOHN MUNROE. A Philosopher among Economists. Edited by J. P. Madden and D. E. Brewster. Philadelphia: J. T. Murphy Company, 1970.

11. BRYANT, R.W.G. Land: Private Property. Public Control. Montreal: Harvest House, 1972.

12. CASTLE, EMERY N. and RETTIG, R. BRUCE. "Land Use Conflicts and Their Resolutions." Journal of Soil and Water Conservation 27 (September 1972): 207-210.

13. CAVENDER, G.W.F. Land Tenure and Use - Action Agency Implication. Knoxville: University of Tennesse Land Economics Research Committee, Publication 9, 1972.

14. CLAUSAN, GERARD. Communal Land Tenure. Study 17. Rome: Food and Agriculture Organization, 1953.

15. DEMSETZ, H. "Toward a Theory of Property Rights." American Economic Review 57 (May 1967): 347-359.

16. DORNER, PETER. Land Reform and Economic Development. Baltimore: Penguin Books, 1972.

17. _____, ed. Land Reform in Latin America. Issues and Cases. Monograph Series 3. Wisconsin: Land Tenure Center, 1971.

18. DOVRING, FOLKE. "Land Ownership and Tenure Reforms." Illinois Agricultural Economist 4 (December 1964): 94-102.

19. ELY, RICHARD T. and GALPIN, CHARLES J. "Tenancy in an Ideal System of Land Ownership." American Economic Review. Supplement 9 (1919): 180-212.

20. FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS. Land Reform. Land Settlement and Co-operatives. Rome: 1968, 1969, 1970, 1971, 1972, 1973.

21. GIBSON, W.L., HILDRETH, R.J., and WUNDERLICH, GENE. Methods for Land Economics Research. Lincoln: University of Nebraska Press, 1966.

22. HARKIN, D.A. "The Decision for Public or Private Ownership of Resources." Land Economics 48 (May 1972): 144-150.

23. HEADY, E.O., HAROLDSEN, EDWIN O., MAYER, LEO U. and TWEETEN, LUTHER G. Roots of the Farm Problem. Ames: Iowa State University Press, 1965.

24. HEADY, E.O. , MAYER, LEO V., and MADSEN, HOWARD C. Future Farm Problems. Ames: Iowa State University Press, 1972.

25. INTER-AMERICAN COMMITTEE FOR AGRICULTURAL DEVELOPMENT (CIDA). Land Tenure Conditions and Socio-economic Development of the Agricultural Sector. 7 Vols. Washington: Pan American Union, 1966.

26. IRONSIDE, R.G., PROUDFOOT, V.B., SHANNON, E.N. and TRACIE, C.J., ed. Frontier Settlement. Studies in Geography, Monography, No. 1. Edmonton: University of Alberta, 1974.

27. IOWA STATE UNIVERSITY CENTER FOR AGRICULTURAL AND ECONOMIC ADJUSTMENT. Problems and Policies of American Agriculture. Ames: Iowa State University Press, 1959.

28. _____ Dynamics of Land Use: Needed Adjustment. Ames: Iowa State University Press, 1961.

29. JOHNSTON, V. WEBSTER and BARLOWE, RALEIGH. Land Problems and Policies. New York: McGraw-Hill Book Company, 1954.

30. KANEL, DON. Creating Opportunities for Small Farmers. The Role of Land Tenure and Service Institutions. Land Tenure Center Series 92. Madison: University of Wisconsin, 1973.

31. _____ Land Tenure Reform as a Policy Issue in the Modernization of Traditional Societies. Land Economics Monograph 3. Madison: University of Wisconsin, 1972.

32. KELSO, M.M. "Needed Research in Farm Tenancy." Journal of Farm Economics. (February 1941): 291-310.

33. LIVERSAGE, V. "The Evolution of Land Tenure." Journal of Agricultural Economics Society 9 (1951): 115-125.

34. LONG, ERVEN. "The Family Farm in Domestic and Foreign Land Tenure Policy." Journal of Farm Economics. (May 1962): 536-549.

35. MACDONALD, NORMAN. English Land Tenure on the North American Continent - A Summary. University of Toronto Studies. Vol. 7. Toronto: University of Toronto Press, 1934.

36. MADDOX, J.G. "Land Tenure Research in a National Land Policy." Journal of Farm Economics 19 (February 1937): 102-111.

37. McENTIRE, DAVIS. Land Reform Goals and Economic Development. Land Reform Study 1. Rome: Food and Agriculture Organization, 1973.

38. McENTIRE, DAVIS and DANILO, AGOSTINI, ed. Toward Modern Land Policies. Padua: Institute of Agricultural Economics and Policy, University of Padua, 1968.

39. Modern Land Policy. By Harold G. Hailcrow, Chairman. Urbana: University of Illinois Press, 1960.

40. National Land Use Policy. Ankeny: Soil Conservation Society of America, 1973.

41. OTTOSON, HOWARD W., WUNDERLICH, GENE, and DRESSLIN, HOWARD G. Land Tenure Research: Scope and Nature. Economic Research Series 119. Washington: United States Department of Agriculture and Interregional Land Tenure Research Committee, 1962.

42. PARSONS, KENNETH H., PENN, RAYMOND J., and RAUP, PHILIP M., ed. Land Tenure. Proceedings of the International Conference on Land Tenure and Related Problems in World Agriculture. Madison: University of Wisconsin Press, 1956.

43. PARSONS, KENNETH H. The Owner Cultivator in a Progressive Agriculture. Agriculture Studies 39. Rome: Food and Agriculture Organization, 1958.

44. PENN, RAYMOND J. "Tenure Innovations and Tenure Problems associated with Vertical Integration." Canadian Journal of Agricultural Economics 6 (1958): 1383-1392.

45. REISS, F.J., HUGHES, R.C., and JUDGE, G.G. "Changes in Farm Tenure: A Markov Process Analysis." Illinois Agricultural Economics 3 (July 1963): 3-16.

46. ROYAL COMMISSION ON AGRICULTURE AND RURAL LIFE. Report 5. Land Tenure: Rights and Responsibilities in Land Use in Saskatchewan. Regina: Queen's Printer, 1955.

47. SALTER, L.A. "Farm Property and Agricultural Policy." Journal of Political Economy 51 (February 1943):

48. _____. Land Tenure in Process. Research Bulletin 146. Madison: Wisconsin Agricultural Experimental Station, 1943.

49. SCHICKELE, RAINER. "Theories Concerning Land Tenure." Journal of Farm Economics 34 (1952): 734-744.

50. SCHICKELE, RAINER, and HUMMEL, J.P. Problems of Land Tenure in Relation to Land Use. Washington: Land Use Planning Publishers, 1936.

51. SCHULTZ, THEODORE W. "A Framework for Land Economics - The Long View." Journal of Farm Economics 33 (May 1951): 204-215.

52. SPIEGEL, HENRY WILLIAM. Land Tenure Policies at Home and Abroad. Chapel Hill: University of North Carolina Press, 1941.

53. THARP, MAX M. "A Reappraisal of Farm Tenure Research." Land Economics 24 (November 1948): 315-330.

54. TIMMONS, JOHN F., and MURRAY, W.G., ed. Land Problems and Policies. Ames: Iowa State College Press, 1950.

55. TUMA, ELIAS H. Twenty-six Centuries of Agrarian Reform. A Comparative Analysis. Berkeley: University of California Press, 1965.

56. UNITED STATES DEPARTMENT OF AGRICULTURE. Land Ownership. A Bibliography of Selected References. Bibliographical Bulletin 22. Washington: United States Government Printing Office, 1953.

57. ZUCKERMAN, S. Land Ownership and Resources. Cambridge: University of Cambridge Department of Estate Management, 1958.

II Land Tenure; Legal Aspects

1. ALLEE, DAVID J. "Public and Private Property Rights." Farm Found Increasing Public Problem Policies 72 (1972): 63-69.

2. Commission of Inquiry into Land Tenures. First Report by R. Else-Mitchell, Chairman. Canberra: Australian Government Publishing Service, 1975.

3. CRIBBET, JOHN E. "Changing Concepts in the Law of Land Use." Iowa Law Review 50 (1965): 245.

4. ESAU, ALVIN A.J. Land Ownership Rights. Law and Land: An Overview. Technical Report 9. Edmonton: Alberta Land Use Forum, 1974.

5. FOOD AND AGRICULTURE ORGANIZATION OF THE UNITED NATIONS. Land Reform. Land Settlement and Co-operatives. Rome, 1968, 1969, 1970, 1971, 1972.

6. GIBSON, W.L. "Land Use and Public Right in Land." Virginia Polytechnical Institute, 1972.

7. JOHNSON, O.E. "Economic Analysis, The Legal Framework and Land Tenure Systems." Journal of Law Economics 15 (April 1972): 259-276.

8. JOYCE, T.F. Provincial Agricultural Legislation in Western Canada, 1971. Publication 72/8. Regina: Canada Department of Agriculture, 1972.

9. PENN, RAYMOND J. "Public Interest in Private Property (Land)." Land Economics 37, 2 (May 1961): 99-104.

10. SYCHUK, MAURICE J. Cases and Materials on Land Titles. Vol. 1, Vol. 2. Edmonton: University of Alberta, 1971.

11. TIMMONS, JOHN F. "Integration of Law and Economics in Analyzing Land Use Problems." Journal of Farm Economics 37 (1955): 1126-1142.

III Land Tenure; Canada; Alberta

1. ABELL, HELEN C. "The Family Farm in Canada." Economic Analyst 29 (June 1959).

2. ABLASSER, G. Farm Real Estate Sales in the Prairie Provinces 1963-1967. Publication 69/6. Ottawa: Canada Department of Agriculture, 1969.

3. ANDARAWEWA, A.B. "Tenure Patterns and the Commercialization of Canadian Agriculture." Canadian Journal of Agricultural Economics 17 (February 1969): 110-120.

4. ARCUS, PETER L. "New Directions in Land Use Control in British Columbia." Canadian Journal of Agricultural Economics 22 (February 1974): 74-80.

5. BARBER, S.H. Farm Land Prices in Saskatchewan. Regina: Saskatchewan Department of Agriculture, 1971.

6. BOYLEN, DIANA M. Rural Land Tenure. Technical Report 6B. Edmonton: Alberta Land Use Forum, 1974.

7. BOYLEN, DIANA M. Structure of Alberta Farms. Technical Report 11. Edmonton: Alberta Land Use Forum, 1974.

8. BROWN, JACOB A. A Study of Purchases and Ownership of Saskatchewan Farm Lands by Citizens and Companies of the United States of America to December 31, 1970. Research Report 72-11. Saskatoon: University of Saskatchewan Department of Agricultural Economics, 1972.

9. BROWN, JACOB A. and BENS, ROBERT J. Farm Tenure in Saskatchewan. An Economic Evaluation of Present Situation and Future Prospects. ARDA Project 27072. Saskatoon: University of Saskatchewan Department of Agricultural Economics, 1971.

10. CANADA DEPARTMENT OF AGRICULTURE. Farm Rental, Operating and Transfer Arrangements in the Prairie Provinces. Publication 956. Ottawa: Queen's Printers, 1963.

11. CANADIAN COUNCIL ON RURAL DEVELOPMENT. Rural Canada, 1970: Prospects and Problems. Third Report. Ottawa: Queen's Printer, 1969.

12. Final Report of the Special Committee on the Ownership of Agricultural Lands. By John Kowalchuk, Chairman. Regina: Legislative Assembly of Saskatchewan, 1973.

13. FLOYD, J.E. Land Tenure and Co-operative Farming in Saskatchewan. Regina: Economic and Planning Advisory Board, 1958.

14. FOWKE, V.C. Canadian Agricultural Policy, The Historical Pattern. Toronto: University of Toronto Press, 1946.

15. GILSON, J.C. Economic Aspects of Tenant-Operated Farms in Southwestern Manitoba. Winnipeg: University of Manitoba, Faculty of Agriculture, 1960.

16. HU HARRIES AND ASSOCIATES LTD. Future Land Needs for Agriculture. Technical Report 5. Edmonton: Alberta Land Use Forum, 1974.

17. HUDSON, S.C. "Trends in Land Tenure in Canada." Economic Annalist 7 (1937): 74-78.

18. IRONSIDE, R.G., and TOMASKY, E. "Development of Victoria Settlement." Alberta Historical Review, 19, 2 (Spring, 1971): 20-29.

19. JOYCE, T.F. "Policy and Administration of Public Lands in Alberta with Particular Reference to Agriculture." Canadian Farm Economist 4 (April 1969): 28-33.

20. LATTIMER, J.E. "Land Tenure and Settlement." Economic Origins of Canadian Agriculture. Edited by J.F. Booth. Ottawa: Economic Division, Canada Department of Agriculture, 1940.

21. MARTIN, CHESTER. "Dominion Lands Policy." Vol. 2. Canadian Frontiers of Settlement. Edited by W.A. Mackintosh and W.L.G. Joerg. Toronto: The MacMillan Company, 1938.

22. MILLER, R.J., and MCARTHUR, G. ROSS. An Overview of Rural Subdivision in Alberta. Edmonton: Alberta Land Use Forum, 1974.

23. MORTON, ARTHUR S. "History of Prairie Settlement." Vol. 2. Canadian Frontiers of Settlement. Edited by W.A. Mackintosh and W.L.G. Joerg. Toronto: The MacMillan Company, 1938.

24. NELSON, J.G., SCACE, R.C., KOWRI, R., ed. Canadian Public Land Use in Perspective. Ottawa: Social Science Research Council of Canada, 1973.

25. NORRIE, K.H. Free Homesteads and the Rate of Prairie Settlement, 1870-1911. Research Paper 19. Edmonton: Department of Economics, University of Alberta, 1973.

26. _____. "Economic Opportunity and the Western Migration of Canadians during the late Nineteenth Century: A Comment." Canadian Journal of Economics and Political Science. (November, 1964): 570-584.

27. PARLBY, G.B.H. An Overview of Land Use in Alberta. Edmonton: Resource Economics Branch, Alberta Agriculture, 1973.

28. PEI, C.C.M. An Investigation into Rural Property Ownership in Alberta. Technical Report 6A. Edmonton: Alberta Land Use Forum, 1973.

29. PEI, C.C.M. A Look at Rural Land Ownership in Alberta. Technical Report 6C. Edmonton: Alberta Land Use Forum, 1974.

30. PETERS, F.H. "Land Tenure in Canada." Empire Survey Review. VII, 51 (1944): 200-209.

31. Report of the Royal Commission on Land Ownership and Land Use. Charles W. Raymond, Chairman. Charlottetown, P.E.I.: Queen's Printer, 1973.

32. STAHL, J. "The Dynamics of Agricultural Adjustment on the Prairies." Economic Planning. 8, 2 (March-April 1972): 3-9.

33. STRANGE, H.G.L. A Short History of Prairie Agriculture. Winnipeg: Searle Grain Company, Ltd., 1954.

34. STUTT, R.A. "Changes in Land Use and Farm Organization in the Prairie Area of Saskatchewan during the Period 1951 to 1966." Canadian Farm Economics. 5, 6 (February, 1971): 11-19.

35. SZABO, M.L. "Area Differential Productivity of Agricultural Resources and Off-farm Migration on the Canadian Prairies." Geographical Bulletin 8 (1966): 119-133.

36. SZABO, M.L. "Characteristics of Non-Resident Farm Operations on the Canadian Prairies." Geographical Bulletin 8 (1966): 279-303.

37. SZABO, M.L. "Depopulation of Farms in Relation to the Economic Conditions of Agriculture on the Canadian Prairies." Geographical Bulletin 7 (1965): 187-202.

38. TREMBLAY, M.A., and ANDERSON, W.J., ed. Rural Canada in Transition. Ottawa: Agricultural Economics Research Council of Ottawa, 1966.

39. ZIMMERMAN, CARLE C. and MONES, GARY. "The Total Community of the Canadian Wheat Prairies." Canadian Journal of Agricultural Economics. 18, 3 (November 1970): 6-28.

IV Land Tenure; Statistics

1. ALBERTA AGRICULTURE. Alberta Agriculture. A History in Graphs. Edmonton: Queen's Printer, 1972.

2. ALBERTA AGRICULTURE. A Historical Series of Agricultural Statistics for Alberta. Edmonton: Queen's Printer, 1969.

3. ALBERTA AGRICULTURE. A Historical Series of Agricultural Statistics for Alberta (Supplement). Edmonton: Queen's Printer, 1974.

4. ALBERTA AGRICULTURE RESOURCE ECONOMICS BRANCH. Selected Statistics Regarding the Agricultural Use of Land. Edmonton: Alberta Land Use Forum, 1974.

5. MILLER, R.J., and WHITE, G.R. Rural Real Estate Values in Alberta. Edmonton: Resource Economics Branch, Alberta Agriculture, 1971, 1972, 1973, 1974.

6. STATISTICS CANADA. Agriculture Alberta. Ottawa: Queen's Printer, 1911, 1921, 1931, 1941, 1951, 1956, 1961, 1966, 1971.

7. STATISTICS CANADA. Agriculture. Cross-classified Socio-economic Characteristics of Farm Operators. Ottawa: Queen's Printer, 1974.

V Land Tenure; United States

1. ANDERSON, JONATHAN D., and JOHNSON, ROGER G. "Organization of Farms and Land Tenure in the Red River Valley." North Dakota Farm Research. 28, 1 (September-October 1970).

2. BANKS, VERA J., and BEALE, CALVIN L. Farm Population By Race, Tenure, and Economic Scale of Farming, 1966 and 1970. Agricultural Economics Report 228. Washington: U.S. D.A. Economic Research Service, 1972.

3. BARLOWE, RALEIGH. "Homestead Tax Exemption: A Tenure Improvement Measure?" Journal of Land and Public Utility Economics. 23, 4 (November 1947): 360-370.

4. BOXLEY, ROBERT F. Owner Characteristics and Distribution of Landownership in the Eastern Great Plains. Report 197. Washington: U.S.D.A. Economic Research Service, 1964.

5. CLAWSON, MARION. The Land System of the United States. An Introduction to the History and Practice of Land Use and Land Tenure. Lincoln: University of Nebraska Press, 1968.

6. DOVRING, FOLKE. "Land Ownership and Tenure Reforms." Illinois Agricultural Economics. 4, 3 (December 1964): 94-102.

7. FREUND, RUDOLF. "John Adams and Thomas Jefferson on the Nature of Land-holding in America." Land Economics. 24, 2 (May 1948): 107-119.

8. GATES, PAUL WALLACE. "The Homestead Law in an Incongruous Land System." American Historical Review. 41, 4 (July 1936): 652-681.

9. GATES, PAUL WALLACE. "Land Policy and Tenancy in the Prairie States." Journal of Economic History. 1 (May 1941): 60-82.

10. INMAN, BRIES T., and FIPPIN, WILLIAM H. Farm Land Ownership in the United States. Miscellaneous Publication 699. Washington: U.S.D.A. Bureau of Agricultural Economics, 1949.

11. JOHNSON, BRUCE B. Farmland Tenure Patterns in the United States. Agricultural Economic Report 249. Washington: U.S.D.A. Economic Research Service, 1974.

12. MICHIGAN STATE UNIVERSITY, CENTRE FOR RURAL MANPOWER AND PUBLIC AFFAIRS. Toward An Effective Land Use Policy for Michigan. Proceedings of a Conference. East Lansing, 1973.

13. MOYER, DAVID D., HARRIS, MARSHAL, and HARMON, MARIE B. Land Tenure in the United States. Development and Status. Agricultural Information Bulletin 338. U.S.D.A. Economic Research Service, 1969.

14. SAKOLSKI, AARON M. Land Tenure and Land Taxation in America. New York: Robert Schalkenback Foundation, 1957.

15. SCHICKELE, RAINER. "Tenure Problems and Research Needs in the Middle West." Journal of Farm Economics. 19 (February, 1937): 112-147.

16. SCHICKELE, RAINER. "Toward a Progressive Theory of Land Tenure." South Pacific Bulletin. 20, 2 (1970): 28-32.

17. SOUTHERN LAND ECONOMICS RESEARCH COMMITTEE. Farmland Tenure and Farmland Use in the Tennessee Valley. Publication 9. Knoxville: University of Tennessee, 1972.

18. TIMMONS, JOHN F. "Farm Ownership in the United States: An Appraisal of the Present Situation and Emerging Problems." Journal of Farm Economics. 30, 1 (February, 1948).

VI Land Economics; Farm Size

1. BOXLEY, R.F. "Farm Size and the Distribution of Farm Numbers." American Economic Research. 23 (1971): 87-94.

2. DOVRING, FOLKE. "Distribution of Farm Size and Income: Analysis by Exponential Functions." Land Economics. 49, 2 (May 1973): 133-148.

3. HEADY, EARL O., JOHNSON, GLENN L., and HARDIN, LOWELL S., ed. Resource Productivity, Returns to Scale and Farm Size. Ames: Iowa State College Press, 1956.

4. HUANG, YUKON. "On Some Determinants of Farm Size across Countries." American Journal of Agricultural Economics. 55, 1 (February 1973): 89-92.

5. JOHNSTON, WARREN E. "Economies of Size and the Spatial Distribution of Land in Farming Units." American Journal of Agricultural Economics. 54, 4 (November 1972): 654-656.

6. KANEL, DON. "Size of Farm and Economic Development." Indian Journal of Agricultural Economics. 22, 2 (April-June 1967).

7. TARVER, J.D. "Locational Aspects of Population Densities, Farm Size and Farm Land Values." Rural Sociology. 31, 1 (1966): 40-52.

VII Land Economics; Productivity and Efficiency

1. HARWELL, R. LYNN, and STRICKLAND, P. LESS. "Is the Crop-share Lease Efficient." Oklahoma Current Farm Economics. 43, 4 (December 1970): 9-17.

2. HEADY, EARL O., and KEHRBERG, EARL W. Relationship of Crop-share and Cash Leasing Systems to Farming Efficiency. Bulletin 386. Ames: Iowa Agricultural Experimental Station, 1952.

3. HENDRIX, W.S. "Discussion: Relative Efficiencies of Alternative Tenure Systems." Journal of Farm Economics. 38 (December 1955): 1367-1369.

4. LANGEMEIER, LARRY N. "Effect of Tenure Relationships on Resource Efficiency." Canadian Journal of Agricultural Economics. 18, 2 (July 1970): 74-86.

5. OTTOSON, HOWARD W. "The Application of Efficiency to Farm Tenure Arrangements." Journal of Farm Economics. 37 (1955): 134-1353.

6. SCHICKELE, RAINER. "Effects of Tenure Systems on Agricultural Efficiency." Journal of Farm Economics. 23 (February 1941): 185-207.

VIII Land Economics; Property Taxation

1. ANDERSON, M.S. Today's Taxes. Tomorrow's Agriculture. Ottawa: Agricultural Economic Research Council of Canada, 1973.

2. BENTICK, B.L. "Improving the Allocation of Land between Speculators and Users: Taxation and Paper Land." Economic Record. 48, 121 (March 1972): 18-41.

3. CARMAN, HAY F. "Changing Federal Income Tax Rates and Optimum Farm Size." American Journal of Agricultural Economics. 54, 3 (August 1972): 490-491.

4. DEATON, BRADY J. "Taxation of Agricultural Lands." Tennessee Survey of Business. 9, 7 (March 1974): 3-6.

5. HILL, W.R. BRUCE. Property Taxation and Land Development. Toronto: Bureau of Municipal Research, 1973.

6. STAM, JEROME M., and COURTNEY, ELEANOR L. Farm Real Estate Taxes: Recent Trends and Developments. Washington: U.S.D.A. Agricultural Economic Research Service, 1974.

7. OWEN, MICHAEL S., and THIRSK, WAYNE R. "Land Taxes and Idle Land: A Case Study of Houston." Land Economics. 50, 3 (August 1974).

8. PASOUR, E.D. "Real Property Taxes and Farm Real Estate Values: Incidence and Implications." American Journal of Agricultural Economics. 55, 4 (November 1973): 549-556.

IX Land Economics; Farm Leases

1. ADAMS, R.L., and SMITH, W. "Empirical Methods for Determining the Division of Farm Income." Farm Tenancy in California and Methods of Leasing. Bulletin 655. Berkeley: California Agricultural Experimental Station, 1941.

2. BARKLEY, PAUL W., and PINE, WILFRED H. Effects of Tenure on Farm Improvements. Bulletin 454. Kansas Experimental Station, 1963.

3. BENS, R.J. An Economic Evaluation of Share Rental Arrangements in Saskatchewan. Unpublished M. Sc. Thesis. Saskatoon: University of Saskatchewan, 1969.

4. BENY, RUSSELL L. "Cost Sharing as a Means of Improving the Share Rent Lease." Journal of Farm Economics. 44 (August 1962): 796-807.

5. BENY, RUSSELL L. "Share Rents as an Obstacle to Farm Improvement and Soil Conservation." Land Economics. 40 (August 1964): 346-352.

6. CHEUNG, S. "The Structure of a Contract and the Theory of a Non-exclusive Resource." Journal of Law and Economics. 13 (April 1970): 49-70.

7. CHEUNG, S. The Theory of Share Tenancy. Chicago: The University of Chicago Press, 1969.

8. CHRYST, WALTER E., and TIMMONS, JOHN F. Adjusting Farm Rents to Changes in Prices, Costs, and Production. Special Report 9. Ames: Iowa Agricultural Station, 1955.

9. HURLBURT, VIRGIL L. Use of Farm Resources as Conditioned by Tenure Arrangements. Bulletin 215. Lincoln: Nebraska Agricultural Experiment Station, 1964.

10. JOHNSON, D. GALE. "Resource Allocation under Share Contracts." Journal of Political Economics. 58 (April 1950): 111-123.

11. JOHNSON, ROGER G., and ANDERSON, JONATHAN D. "Partial Farm Rental with Crop-share Leases." North Dakota Farm Research. 29, 6 (July 1972): 33-34.

12. KAY, RONALD D. Calculating Ownership Costs. College Station: Texas Agricultural Experimental Station, 1973.

13. KELSEY, MRYON P., and JANSSEN, MELVIN R. "Bilateral Monopoly in Farm Leasing." Canadian Journal of Agricultural Economics. 6, 2 (1958): 1828-1831.

14. MAISONNEUVE, MARCEL J. Leasing Land, Buildings and Equipment. Edmonton: Rural Education Development Association, 1972.

15. MCNULTY, J. "Farm Tenancy and Costs of Borrowing." Journal of Farm Economics. 37 (1955): 358-359.

16. REINSEL, ROBERT D., and JOHNSON, BRUCE. Farm Tenure and Cash Rents in the United States. Agricultural Economic Report 190. Washington: U.S.D.A. Economic Research Service, 1970.

17. REISS, FRANKLIN J. "Buying versus Renting Farmland." Illinois Agricultural Economics. (January 1972): 37-40.

18. SINGLETON, CAREY B. Agricultural Rents in Theory and Practice. An Annotated Bibliography. Miscellaneous Publication 901. Washington: U.S.D.A. Economic Research Service, 1962.

X Land Economics; Land Prices

1. ATKINSON, J.H. "Land Prices - How Much Higher?" Journal of American Society of Farm Managers and Rural Appraisers. 38, 1 (April, 1974): 13-16.

2. BLASE, MELVIN G., and HESEMANN, CLYDE. "Farm Land Prices: Explainable or Illogical." South Journal of Agricultural Economics. 5, 1 (July 1973): 265-270.

3. BLUMENFELD, HANS. Land Control and Land Prices. Vancouver: Regional District, 1973.

4. BOVARD, GARY N., and HUSHAK, LEROY G. Determinants of Land Values at the Urban-Rural Fringe. Paper 86. Columbus: Ohio State University, 1972.

5. CASETTI, E. "Spatial Equilibrium Distribution of Agricultural Production and Land Values." Economic Geographer. 48, 2 (April 1972): 193-198.

6. CLARK, COLIN. The Value of Agricultural Land. Oxford: Pergamon Press, 1973.

7. CROWLEY, WILLIAM D. "Anticipated Rent and Property Value Increases and their Influence on the Apparent Low Rates of Return on Farmland Investments." Presented at Annual Meeting of the A.A.E.A., C.A.E.S., W.A.E.A. Edmonton, 1973.

8. HERDT, ROBERT W., and COCHRANE, WILLARD W. "Farm Land Prices and Farm Technological Advance."

9. OPPENHEIMER, HARDOL L. Land Speculation: An Evaluation and Analysis. Danville, Ill.: Inter-state Printers, 1972.

10. REINSEL, ROBERT D. "Effect of Seller Financing on Land Prices." Agricultural Financial Review. 33 (July 1972): 32-35.

11. REINSEL, ROBERT D. "Land Rents, Values and Earnings." Presented at Annual Meeting of A.A.E.S., C.A.E.S., W.A.E.A. Edmonton, 1973.

12. REINSEL, ROBERT D., and KRENZ, RONALD D. Capitalization of Farm Program Benefits into Land Values. Bulletin 506. Washington: U.S.D.A. Economic Research Service, 1972.

XI Land Economics; Economics of Property Rights; General

1. FURUBOTN, EIRIK G., and PEJOVICH, SVETOZAR. The Economics of Property Rights. Cambridge: Ballinger Publishing Co., 1974.

2. FURUBOTN, EIRIK G., and PEJOVICH, SVETOZAR. "Property Rights and Economic Theory: A Survey of Recent Literature." Journal of Economic Literature. 10 (1973): 1137-1162.

3. HARRIS, MARSHALL. Entrepreneurial Control in Farming. Bulletin 542. Washington: U.S.D.A. Economic Research Service, 1974.

4. HEADY, EARL O. Economics of Agricultural Production and Resource Use. Englewood Cliffs: Prentice-Hall Inc., 1952.

5. HEADY, EARL O. "Economics of Farm Leasing Systems." Journal of Farm Economics. 28 (August 1947): 659-678.

6. HEADY, EARL O. "Research Techniques for Economic Appraisal of Private Land Use Decisions." Proceedings of a Seminar on the Economic Aspects of Land Use. Guelph, 1957.

7. HEADY, EARL O., and JENSEN, HAROLD R. Economics of Land Use and Rotation. Bulletin 383. Ames: Iowa Agricultural Experiment Station, 1939.

8. HIGGS, R. "Property Rights and Resource Allocation under Alternative Land Tenure Forms: A Comment." Oxford Economic Papers. 24, 3 (November 1972): 428-431.

9. HOPPER, W.D., ed. Proceedings of a Seminar on the Economic Aspects of Land Use. Guelph: Ontario Agricultural College, 1957.

10. SALTER, LEONARD A. A Critical Review of Research in Land Economics. Minneapolis: University of Minnesota Press, 1948.

11. THOMAS, H.A. "Aspects of the Economics of Landownership." Journal of Agricultural Economics. 18, 2 (1967): 197-219.

XII Land Tenure; Risk, Uncertainty and Decision-making

1. Proceedings from the Research Conference on Risk and Uncertainty in Agriculture. Wilfred H. Pine, Chairman. Bulletin 400. Fargo: North Dakota Agricultural Experimental Station, 1955.

2. HUANG, YUKON. "Risk, Entrepreneurship and Tenancy." Journal of Political Science. 81, 5 (September 1973): 1241-1244.

3. THOME, JOSEPH R. Improving Land Tenure Security. Land Economics Monograph 3. Madison: University of Wisconsin, 1971.

XIII Attitude and Behaviour; General

1. BROWN, SHEILA A. "Attitudes and Behaviour: A Literature Review." Unpublished manuscript, Edmonton: Department of Geography, University of Alberta, 1972.

2. DALES, J.H. "Beyond the Marketplace." Canadian Journal of Economics, 8, 4 (November, 1975): 483-503.

3. DAWES, ROBYN M. Fundamentals of Attitude Measurement. New York: John Wiley and Sons, Inc., 1972.

4. FESTINGER, L. and KATZ, D., ed. Research Methods in the Behavioural Sciences. New York: Holt, Rinehart and Winston, 1953.

5. FISHBEIN, M. Readings in Attitude Theory and Measurement. New York: John Wiley and Sons, 1967.

6. FISHBEIN, MARTIN and AJZEN, ICEK. "Attitudes Towards Objects as Predictors of Single and Multiple Behavioural Criteria." Psychological Review, 81, 1 (January, 1974): 59-74.

7. GOLLEDGE, R.G.; BROWN, L.A. and WILLIAMSON, FRANK. "Behavioural Approaches in Geography: An Overview." The Australian Geographer, 22, 1 (1972): 59-79.

8. HUGHES, G. DAVID. Attitude Measurement for Marketing Strategies. Glenview: Scott, Foresman and Company, 1971.

9. KRECH, D.; CRUTCHFIELD, R.S.; and BALLACHEY, E.L. Individual in Society. New York: McGraw-Hill, 1962.

10. LEMON, NIGEL. Attitudes and Their Measurement. London: B.T. Batsford Limited, 1973.

11. McKENNELL, AUBREY C. "Surveying Attitude Structures: A Discussion of Principles and Procedures." Quality and Quantity, Vol. 7. Amsterdam: Elsevier Scientific Publishing Company, 1974.

12. MURPHY, PETER E. and GOLLEDGE, REGINALD G. Comments on the Use of Attitude as a Variable in Urban Geography. Discussion Paper 25. Columbus: Ohio State University, 1972.

13. OSGOOD, C.E.; SUCI, G.J.; and TANNENBAUM, P.H. The Measurement of Meaning. Urbana: University of Illinois Press, 1957.

14. SUMMERS, G. Attitude Measurement. Chicago: Rand McNally, 1970.

15. TRIANDIS, HARRY C. Attitude and Attitude Change. New York: John Wiley and Sons, Inc., 1971.

16. WICKER, A.W. "Attitudes Versus Actions: The Relationship of Verbal Attitudes and Overt Behavioural Responses to Attitude Objects." Journal of Social Issues, 25 (1969): 41-78.

XIV Attitude and Behaviour; Likert Scaling Technique

1. EDWARDS, A.L. Techniques of Attitude Scale Construction. New York: Appleton-Century Crofts, 1957.

2. EDWARDS, ALLEN L. and KENNEY, KATHRYN CLAIRE. "A Comparison of the Thurstone and Likert Techniques of Attitude Scale Construction." Journal of Applied Psychology, 30 (1946): 72-83.

3. NAVARICK, DOUGLAS J. and FANTINO, EDMUND. "Stochastic Transitivity and Unidimensional Behaviour Theories." Psychological Review, 81, 5 (September, 1974).

4. SHAW, M.E. and WRIGHT, J.M. Scales for Measurement of Attitudes. New York: McGraw-Hill, 1967.

5. WARLAND, REX H. and SAMPLE, JOHN. "Response Certainty as a Moderator Variable in Attitude Measurement." Rural Sociology, 38, 2 (Summer, 1973): 174-186.

XV Attitude and Behaviour; Semantic Differential Scale

1. BROWN, SHEILA A. and FAIRBAIRN, KENNETH J. An Investigation of Attitude as a Determinant of Consumer Spatial Behaviour: An Edmonton Example. Edmonton: University of Alberta, 1975.

2. DOWNS, R. "The Cognitive Structure of an Urban Shopping Centre." Environment and Behaviour, 2 (1970): 13-39.

3. GOLANT, S. and BURTON, I. "A Semantic Differential Experiment in the Interpretation and Grouping of Environmental Hazards." Geographical Analysis, 11, 2 (April, 1970): 120-134.

4. HEISE, D. "Some Methodological Issues in Semantic Differential Research." Psychological Bulletin, 72, 6 (1969): 406-422.

5. LUNDEEN, RICHARD. The Semantic Differential Technique and Personal Construct Theory in Image Measurement. Discussion Paper 5. Toronto: Department of Geography, York University, 1972.

6. NUNNALLY, J.C. Tests and Measurement: Assessment and Prediction. New York: McGraw-Hill, 1959.

7. OSGOOD, C.E.; SUCI, G.J. and TANNENBAUM, P.H. The Measurement of Meaning. Urbana: University of Illinois Press, 1957.

8. SNIDER, J.G. and OSGOOD, C.E. Semantic Differential Technique: A Source Book. Chicago: Aldine, 1969.

XVI Research Analysis; Statistic and Econometric Methods

1. CHISWICK, BARRY R. and CHISWICK, STEPHEN J. Statistics and Econometrics: A Problem-Solving Text. Baltimore: University Park Press, 1975.

2. ESEKIEL, MORDECAI and FOX, KARL A. Methods of Correlation and Regression Analysis, 3rd ed. New York: John Wiley and Sons, 1966.

3. FREUND, JOHN E. Modern Elementary Statistics, 3rd ed. Englewood Cliffs: Prentice-Hall, Inc., 1967.

4. GREGORY, S. Statistical Methods and the Geographer, 2nd ed. London: Longmans, 1963.

5. JOHNSTON, J. Econometric Methods, 2nd ed. New York: McGraw-Hill Book Company, 1972.

6. KING, LESLIE J. Statistical Analysis in Geography. Englewood Cliffs: Prentice-Hall, Inc., 1969.

7. MESSICK, D., ed. Mathematical Thinking in Behavioural Science. San Francisco: W.H. Freeman and Company, 1966.

8. NEFT, DAVID S. Statistical Analysis for Areal Distributions. Philadelphia: Regional Science Research Institute.

9. NIE, NORMAN H.; HALL, C. HADLAI; JENKINS, JEAN G.; STEINBRENNER, KARIN; and BENT, DALE H. Statistical Package for the Social Sciences, 2nd ed. New York: McGraw-Hill, Inc., 1975.

10. RAO, POTLURI and MILLER, ROGER LEROY. Applied Econometrics. Belmont: Wadsworth Publishing Company, Inc., 1971.

11. RUMMEL, R.J. Applied Factor Analysis. Evanston: Northwestern University Press, 1970.

12. SPURR, WILLIAM A. and BONINI, CHARLES P. Statistical Analysis for Business Decisions. Homewood: Richard D. Irwin, Inc., 1973.

13. THURSTONE, L.L. Multiple Factor Analysis. Chicago: University of Chicago Press, 1947.

XVII Research Design; Sampling Methodology; Questionnaire Design

1. BURTON, THOMAS L. and CHERRY, GORDON E. Social Research Techniques for Planners. London: George Allen Unwin Limited, 1970.

2. BUSE, REUBEN C. "Increasing Response Rates in Mailed Questionnaires." American Journal of Agricultural Economics, 55, 3 (August, 1973): 503-508.

3. COLLIN, W.J. and GAWRELUCK, R.S. "Some Considerations in the Use of Mail Questionnaires in Social Science Research." Unpublished manuscript. Edmonton: Department of Education, University of Alberta, 1971.

4. KISH, LESLIE. Survey Sampling. New York: John Wiley and Sons, Inc., 1965.

5. LANSING, JOHN B. and MORGAN, JAMES N. Economic Survey Methods. Ann Arbor: Institute for Social Research, University of Michigan, 1971.

6. OPPENHEIM, A.N. Questionnaire Design and Attitude Measurement. New York: Basic Books, Inc., 1966.

7. SELLTIZ, C. JAHODA; DEUTSCH, M.; and COOK, S. Research Methods in Social Relations. New York: Holt, Rinehart and Winston, 1966.

8. ZANNARAS, GEORGIA. "Survey Research: The Questionnaire." Unpublished manuscript. Columbus: Department of Geography, Ohio State University, 1970.

Appendix I

Disposition of Public Land in Alberta

Table 1

DISPOSITION OF PUBLIC LAND ADMINISTERED BY

ALBERTA ENERGY AND NATURAL RESOURCES

Items	1972 - 1973 (acres)	1973 - 1974 (acres)	1972 - 1973 (hectares)	1973 - 1974 (hectares)
Homestead Leases				
- Civilians	217,477.08	175,930.00	88 009.93	71 196.41
- Veterans	29,940.99	24,229.88	12 116.70	9 805.49
Homestead Sales				
- Civilians	915,069.20	848,240.12	370 315.69	343 270.90
- Veterans	33,820.50	30,310.89	13 686.68	12 266.39
Homestead Lease Loan Sales	8,739.33	7,469.42	3 536.68	3 022.77
Purchase Agreements-Clearing Projects	5,775.73	4,821.77	2 337.36	1 951.30
Public Land Sales	132,169.50	93,985.81	53 487.15	38 034.74
Farm & Rural Development Sales	89,168.14	139,334.06	36 085.10	56 386.54
Farm & Rural Development Leases	27,931.66	47,476.94	11 303.55	19 213.25
Cultivation Leases	120,767.90	113,735.94	48 873.08	46 027.34
Seed Crop Leases	9,656.60	9,656.60	3 907.89	3 907.89
Accrued Area Lease	546.50	546.50	221.16	221.16
Grazing Leases	4,925,326.22	5,024,380.96	1 993 210.57	2 033 296.63
Grazing Permits	730,200.10	806,413.23	295 501.76	326 344.14
Miscellaneous Leases	66,548.85	55,091.57	26 931.39	22 294.79
Recreational Leases	15,364.57	15,711.30	6 217.83	6 358.14
Mineral Surface Leases	127,414.47	131,306.71	51 562.85	53 137.99
Pipeline Agreements	52,610.41	55,201.65	21 290.70	22 339.33
Pipeline Installations	493.66	555.78	199.78	224.92
Transfer of Administration & Control to Other Departments	1,774.82	2,023.24	718.24	818.78

SOURCE: Based on statistics of Public Lands Division, Department of Lands and Forests Annual Report for for the fiscal year ended March 31st, 1974.

Figure 1

SUMMARY OF REGULATIONS FOR DISTRIBUTION OF PUBLIC LANDS ADMINISTERED BY ALBERTA ENERGY AND NATURAL RESOURCES

A. Homestead Sale

Eligibility

- applicant must be a Canadian citizen who has attained the age of eighteen years but is less than seventy-one years of age and who has resided in Alberta for a total of one year in the three years prior to making application

Features of Homestead Sale Policy

- land applied for must be at least fifty percent arable
- maximum amount of land which can be obtained is 640 acres (259 hectares) including the land owned by the applicant and spouse
- all land applied for under a homestead sale and the applicant's owned land must be within a ten mile (10.61 kilometres) radius
- land is valued at the time of application and the purchase price is payable over a maximum of twenty years.
- annual instalments of principal and interest (at six percent per annum) are due in the fourth year of the term if less than twenty-five acres (10.12 hectares) are under cultivation at the time the homestead sale contract is executed
- taxes are deferred until the fourth year if less than twenty-five acres (10.12 hectares) are under cultivation

- cultivation duties are required annually; a title cannot be issued until at least forty acres (16.19 hectares) per quarter section has been brought to seedbed condition
- residence on the homestead or on a farm of at least eighty acres (32.37 hectares) within a ten mile (10.61 kilometres) radius for a total of twelve months over two or more years with periods of residence of not less than three months in any one year are required. Residence must commence not later than the seventh year of term of the homestead sale
- if the purchaser builds a habitable house worth at least $1,000 on the land he may be granted a credit of $2.00/acre ($0.81/hectare) but not exceeding $500.00

B. Farm and Rural Development Sale

Eligibility

- the applicant must be a Canadian citizen who has attained the age of eighteen years

Features of the Farm and Rural Development Sale

- designed to assist established farmers to acquire additional lands; successful applicant determined after considering experience, present land holdings, need and financial situation
- a sale contract normally has no requirements other than payment of the purchase price
- maximum term is twenty-five years with interest payable at six percent per annum. The minimum down payment (under certain conditions) is six percent of the sale value. Principal payments

only may be deferred for five years

C. Farm and Rural Development Lease

Eligibility

- the applicant must be a Canadian citizen who has attained the age of eighteen years

Features of Farm and Rural Development Lease

- a lease with option to purchase requires that various duties be performed prior to the sale
- a lease with no option may be issued on land in instances where the department does not wish to sell
- successful applicant determined after considering proposed plans, experience, use made of present land holdings, financial situation
- considerable flexibility afforded relative to duties or requirements
- maximum term for a lease with an option to purchase is five years; maximum term for a lease without an option to purchase is ten years
- lease rental is two percent of appraised land value plus five percent of appraised value for improvements
- lessee pays taxes

D. Homestead Lease

On March 31st, 1974, there were 666 Civilian Homestead Leases and eighty Veteran Homestead Leases in effect. The issuance of new Homestead Leases was discontinued in 1964. Lessee may obtain title

after complying with certain prescribed cultivation and residence requirements.

E. Agricultural Farm Sales

The issuance of Agricultural farm sale dispositions has been replaced by the Farm and Rural Development Sale and Lease disposition.

F. Cultivation Leases

Applications are no longer being taken as it has been recommended that this type of disposition be discontinued. Cultivation leases would be replaced by the more flexible Farm Development Leases. Existing Cultivation Leases will be allowed to continue until their expiry and renewal of these leases will be considered under the Farm Development regulations.

G. Cultivation Permit

Cash rent is $2.00/acre ($0.81/hectare) for cultivated land, $0.15/acres ($0.06/hectare) for non-cultivated areas and taxes.

H. Grazing Leases

- grazing leases are issued for a term of five to twenty years, where land is found not suitable for a higher use, such as homestead sale, cultivation or recreational purposes
- an applicant for a grazing lease must be eighteen years of age or older and a Canadian citizen
- with the approval of the Forest Land Use Branch, grazing leases may be issued in the non-settlement area "Green Area", to established farmers who reside within the settlement area

- all holders of grazing leases are responsible for paying the municipal taxes on the lands leased
- the annual rental of the grazing land is based on the weighted average price of beef cattle for the months of July to December of the preceding year, at Calgary market, not including slaughter steers and heifers, Grades A1 and A2; the carrying capacity of the land and the average gain of cattle on grass. The forage value equals average price multiplied by average gain of cattle on grass (250 pounds or 112.5 kilograms) divided by carrying capacity (acres ((hectares)) per animal unit per year). In 1974, the percentage of the forage value used to calculate the rental was fixed by Order-in-Council as follows:

  Seven and one-half percent for South "A" District
  Six and one-quarter percent for Central "B" District
  Three percent for North "C" District

- grazing lease may be assigned to someone eligible to hold a Grazing Lease
- assignment fee is fifty percent of the consideration received by the assignor and shall not be less than two times the total of the current annual rental. Assignment between certain relatives are subject to a fee equal to the current annual rental
- maximum lease size cannot exceed an area sufficient to graze six hundred head of cattle unless a larger area can be leased without adversely affecting the interests of others in the district

I. Grazing Permits

- grazing permits may be issued on public land for the purpose of grazing livestock
- the permitee is required to make payment of the annual rental as well as all taxes levied against the land
- the permit terminates on December 31st, following the date of issue and may be renewed at the discretion of the Director

SOURCE: Regulations under the Alberta Public Lands Act, 1966.

Table 2

DISPOSITION OF PUBLIC LANDS ADMINISTERED

BY ALBERTA MUNICIPAL AFFAIRS (SPECIAL AREAS), 1974

Type of Tenure	Area (acres)	(hectares)
Patented Acreage	1,530,939	619 549.58
Cultivation Lease Acreage	357,721	144 764.68
Cultivation Permit Acreage	2,409	974.89
Irrigation Lease Acreage	2,968	1 201.11
Grazing Lease Acreage	2,895,798	1 171 888.91
Grazing Permit Acreage	7,049	2 852.63
Community Pasture Acreage	175,464	71 007.82
Vacant Lands	11,312	4 577.81
	4,983,660	2 016 817.43

SOURCE: Minutes of Special Areas Board Advisory Committee Conferences, 1974-1975, Alberta Municipal Affairs.

Figure 2

SUMMARY OF REGULATIONS FOR DISPOSITION OF PUBLIC LANDS ADMINISTERED BY ALBERTA MUNICIPAL AFFAIRS, (SPECIAL AREAS)

A. Grazing Lease

Eligibility

- everyone who has attained the age of eighteen and is a Canadian citizen or is a corporation may apply for a grazing lease or renewal of grazing lease. No grazing lease shall be issued to a corporation unless the majority of its shares are owned by residents of the Province who are Canadian citizens and the lease is for the exclusive use and benefit of the shareholders

Term

- twenty years
- renewal option
- assignment fee:

(a) immediate family - $15.00

(b) other - average carrying capacity — fee/acre

30 acres/head/year — $.50/acre

50 acres/head/year — $.30/acre

B. Grazing Permit

- yearly contract
- similar fee structure

C. Cultivation Lease

- same eligibility criteria as for Grazing Leases
- ten years
- renewal option
- rental consists of cash rent on the uncultivated land plus one-sixth share of crop

D. Cultivation Permit

- yearly contract
- similar fee structure

SOURCE: Regulations under the Alberta Special Areas Act, 1964.

Appendix II

Table 1

ALBERTA FARM POPULATION, NUMBERS AND SIZE, 1921-1971

Year	Number of Farms	Acres Per Farm	Total Farm Area (000) ac.	Hectares Per Farm	Total Farm Area (000) hectares
1921	82,954	353	29,293	142.85	11 854.47
1931	97,408	400	38,977	161.87	15 773.45
1941	99,732	434	43,277	175.63	17 513.60
1951	84,315	527	44,460	213.27	17 992.34
1956	79,424	579	45,970	234.31	18 603.42
1961	73,212	645	47,229	261.02	19 112.92
1966	69,411	706	48,983	285.71	19 822.73
1971	62,702	790	49,506	319.70	20 034.39

SOURCE: Alberta Agriculture, A History in Graphs, 1972 (revised).

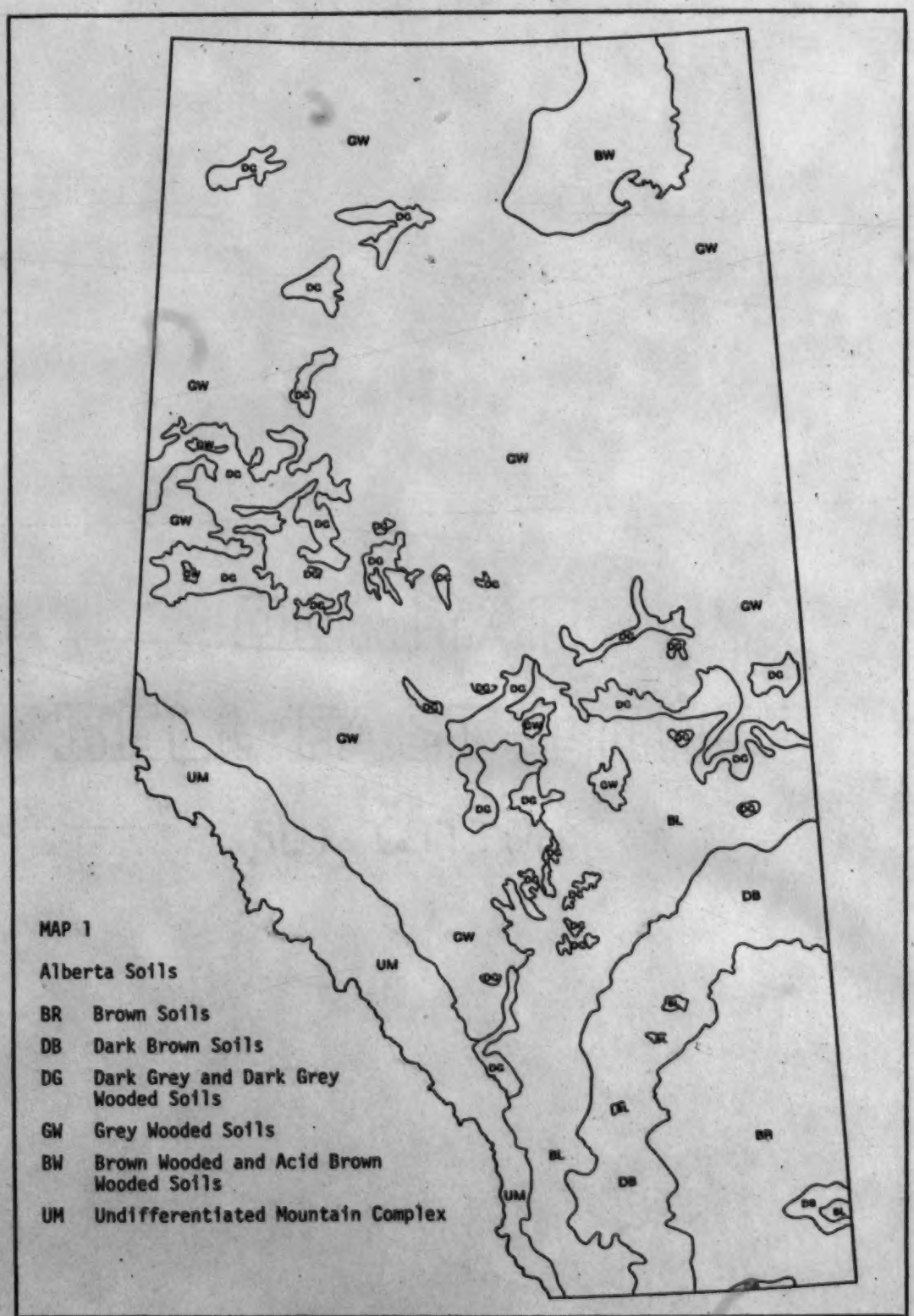
Statistics Canada: Alberta Agriculture, 1971.

Table 2

ALBERTA FARM LAND USE (1921-1971)

		1921	1931	1941	1951	1961	1971
Unimproved Land	'000 Ac.	17,525	21,229	23,152	22,189	21,940	21,046
Woodland	'000 Ac.	2,173	3,894	2,727	2,866	2,138	1,666
Other Unimproved	'000 Ac.	15,352	17,335	20,425	19,323	19,802	19,380
Improved Land	'000 Ac.	11,768	17,749	20,125	22,271	25,289	28,460
Other Improved	'000 Ac.	169	638	669	536	554	614
Pasture	'000 Ac.	157	525	626	1,113	1,670	2,745
Summerfallow	'000 Ac.	2,918	4,547	6,546	6,195	7,450	7,009
Under Crops	'000 Ac.	8,524	12,039	12,284	14,427	15,615	18,092
Unimproved Land	'000 Ha.	7 092.12	8 591.08	9 369.29	8 979.58	8 878.81	8 517.02
Woodland	'000 Ha.	879.38	1 575.85	1 103.58	1 159.83	865.22	674.21
Other Unimproved	'000 Ha.	6 212.74	7 015.23	8 265.71	7 819.75	8 013.59	7 842.81
Improved Land	'000 Ha.	4 762.34	7 182.77	8 144.31	9 012.76	10 234.10	11 517.36
Other Improved	'000 Ha.	68.39	258.19	270.73	216.91	224.20	248.48
Pasture	'000 Ha.	63.54	212.46	253.33	450.42	675.83	1 110.86
Summerfallow	'000 Ha.	1 180.87	1 840.11	2 649.07	2 507.03	3 014.91	2 836.44
Under Crops	'000 Ha.	3 449.54	4 872.01	4 971.16	5 838.40	6 319.17	7 321.58

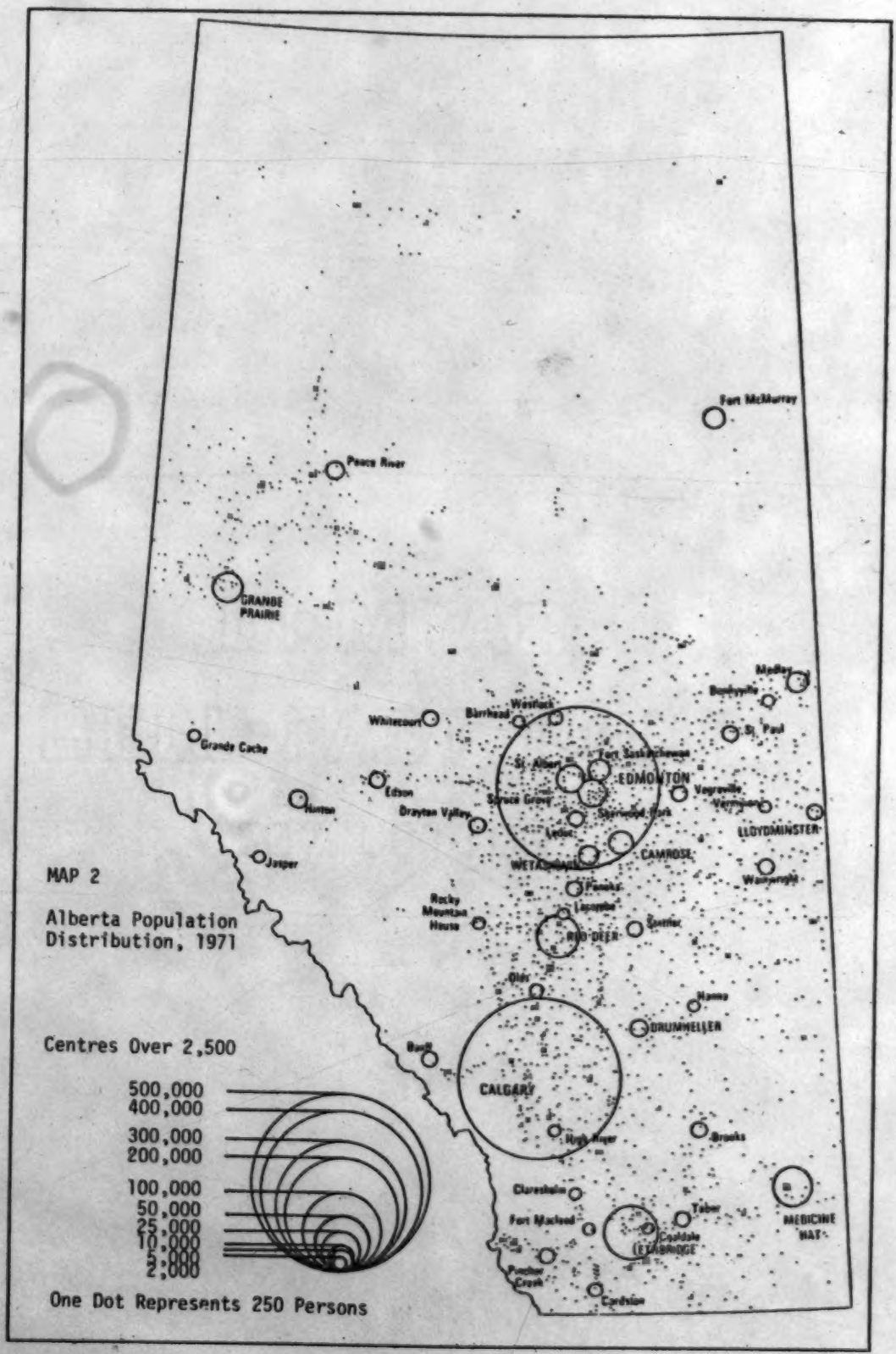
SOURCE: Alberta Agriculture, A History in Graphs, 1972. Statistics Canada, Alberta Agriculture, 1971.



MAP 1

Alberta Soils

BR	Brown Soils
DB	Dark Brown Soils
DG	Dark Grey and Dark Grey Wooded Soils
GW	Grey Wooded Soils
BW	Brown Wooded and Acid Brown Wooded Soils
UM	Undifferentiated Mountain Complex


Fort McMurray
Peace River
GRANDE PRAIRIE
Whitecourt
Barrhead
Westlock
Grande Cache
Edson
Hinton
Drayton Valley
Jasper
EDMONTON
St. Albert
Spruce Grove
Stony Plain
Leduc
Wetaskiwin
CAMROSE
LLOYDMINSTER
Rocky Mountain House
RED DEER
Olds
DRUMMELLER
CALGARY
Brooks
Claresholm
Fort Macleod
Taber
LETHBRIDGE
MEDICINE HAT
Pincher Creek
Cardston
MAP 2
Alberta Population Distribution, 1971
Centres Over 2,500
500,000
400,000
300,000
200,000
100,000
50,000
25,000
10,000
5,000
2,000
One Dot Represents 250 Persons

Appendix III

Alberta

AGRICULTURE

Resource Economics

403/425-9410

Commonwealth Building
9912 - 106 Street
Edmonton, Alberta, Canada
T5K 2C8

July 22nd, 1974

Dear Sir/Madam:

Good available agricultural land at moderate prices is becoming scarce. Alberta agricultural real estate values increased by 14 percent last year. The average number of acres per farm in Alberta increased by 22 percent over the last ten years while the number of farms dropped by 14 percent. Almost 50,000 people left farming from 1961 to 1971.

This questionnaire is one part of a survey on rural land ownership and leasing. We are seeking to find out how the attitudes of Albertans towards land ownership have been shown in their ownership and leasing arrangements. The second on-going part of the survey is considering leasing arrangements in detail, by personal interview.

The information from these surveys will be published by Alberta Agriculture and will be forwarded to all respondents, in time for use during the public hearings of the Alberta Land Use Forum. This survey has the support of the Alberta Land Use Forum and it is hoped that you will also support it through participation in this mail survey.

Your early response to this questionnaire will be greatly appreciated. If you have any questions concerning this survey, please call me collect at 425-9410 Ext. 259.

Sincerely yours,

D. M. Boylen

D. M. Boylen,
Resource Economist

:amc

RURAL LAND TENURE QUESTIONNAIRE CONFIDENTIAL

This questionnaire is divided into 5 sections. Please complete all of Sections A, B and E. If you owned land in 1973-74, please complete Section C. If you rented land this year, please complete Section D.

SECTION "A" 693 Cases

We are interested in your reactions to the following statements. Please check if you strongly agree, agree, are undecided, disagree or strongly disagree with them. If you wish to comment on any statement, please feel free to use the end of the questionnaire.

Statement	Strongly Agree	Agree	Undecided	Disagree	Strongly Disagree
1. The owner has a right to make a profit from his land....	10	28	6	348	507
2. Land ownership gives the freedom to farm the land without interference from government regulation.....	80	484	141	440	282
3. People rent land only when they lack the cash or credit to buy land.....	58	414	192	1,312	140
4. Land banks facilitate agricultural planning and help control urban development.....	36	404	882	452	170
5. The supply of land for farming is unlimited.....	1,150	1,296	114	128	27
6. Renting land can free capital for other investments.....	47	826	264	448	70
7. Farmers who own their own land farm it more efficiently.....	100	508	150	564	208
8. Absentee owners do not look after their land as well....	142	764	180	308	55
9. Higher land taxes would pressure owners to make fuller and better use of their agricultural land.....	100	320	201	622	205
10. Owning land means less money spent on land in the long run.....	215	652	420	556	55
11. Land is a community resource.....	41	568	390	620	275
12. If farms continue to become larger, more leasing will have to occur.....	44	688	447	264	14
13. Land ownership means certainty of having land to farm...	40	188	105	858	184
14. Land banks limit rising land costs.....	23	296	658	680	210
15. The private marketplace is the only fair and efficient mechanism for fairly distributing land resources.....	135	610	687	396	63
16. Public land ownership would reduce local revenues because publicly owned land would be removed from the tax roles.....	51	502	618	572	120
17. Different renting arrangements can lead to sharing of risk and uncertainty.....	61	998	234	152	20
18. Taking the profit incentive out of land would deprive land development of creative leadership and innovation..	70	200	261	740	154
19. Inadequate leasing markets and agreements fail to put agricultural land into good use.....	65	376	561	656	74
20. Land ownership should be pursued for its own virtue.....	100	352	315	724	96

SECTION "A" (continued) 328 cases

Please check (✓) the category which best corresponds to your impression of the noun/adjective scale as it describes land ownership.

LAND OWNERSHIP

	Extremely Good	Quite Good	Slightly Good	Equally Good & Bad or Neither	Slightly Bad	Quite Bad	Extremely Bad	
Freedom	31	18	15	136	66	302	112	Bondage
Neighbourly	301	420	90	412	78	102	16	Unsociable
Efficient	35	24	30	204	93	328	66	Inefficient
Motivating	322	300	146	356	120	92	14	Restraining
Wealth	168	264	240	180	96	36	10	Poverty
Native	70	36	55	404	84	184	54	Foreign
Profitable	196	378	285	388	117	60	7	Unprofitable
Traditional	14	24	65	400	301	178	35	Unconventional
Private	406	360	175	308	96	76	18	Communal
Status	35	48	50	296	165	234	44	Disgrace
Innovative	42	42	85	328	177	206	34	Unchanged
Stable	260	504	196	332	78	72	12	Unstable
Family	448	330	116	336	60	76	24	Corporation
Secure	49	42	100	200	144	240	74	Insecure
Rural	392	384	145	332	84	82	16	Urban
Permanent Roots	560	396	105	288	57	66	25	Homeless

We would like you to answer the following questions, so that we can classify your answers statistically. All answers are CONFIDENTIAL.

1. What is your land location?

section _____ township *See Map for Locations* range _____ meridian _____

2. What are the main value products produced on your farm?

LIVESTOCK						CROPS			
Dairy	8.0 %	Sheep	3.3 %	Wheat	26.3 %	Small Grains	24.4 %
Beef	58.3 %	Poultry	7.5 %	Oil Seed	13.3 %	Vegetables	1.6 %
Hogs	18.3 %	Horses	5.4 %	Pasture & Forage	25.4 %	Sugar Beets	.9 %
Bees	1.4 %	Other	.8 %	Potatoes	1.7 %	Other	6.4 %
		TOTAL	100.00%			TOTAL	100.0 %

3. How many acres are you farming in 1974?

acres owned *av. group 240-389 acres* estimated market value av. *$245.00/acre*
acres rented *av. group 70-239 acres* estimated market value av. *$231.00/acre*
In comparison with last year's total acreage, is this an increase *14.6%*, decrease *8.8%* or the same *76.6%*?

4. Do you operate your farm business as:

Private Individual	49.0 %	Partnership - formal	4.4%	Corporation - family	10.5 %
		- informal	6.8%	- other than family	.1 %
Co-operative	0.7 %	- husband-wife	26.9%	Other (Please specify)	1.5 %
		Sub-Total	38.1%	TOTAL	100.0 %

5. How many months have you lived on your farm in the past year (June, 1973 - June, 1974)?

did not live on holding *9.1* % 1 - 4 months *3.4* % 5 - 8 months *3.2* % 9 - 12 months *84.2* %

6. In the past year, the main sources of net income on your farm were:

47.5% of the farmers questioned, had off-farm income.

Farm Production	____%	
If there was Off-farm Employment, it accounted for:		
- by Operator	60.0%	29.7% of the cases
- by Wife & Children	35.0% of the income for	9.8% of the cases
Other	25.0%	8.0% of the cases

7. What do you think are the percentage values of your farm investments?

Machinery & Equipment	17.6%	
Buildings	9.4%	
Feed & Supplies	5.2%	
Livestock	13.9%	
Land - owned	44.5%	53.9%
- rented	9.4%	
TOTAL	100.0%	

8. In agriculture, much of the knowledge and expertise are learned "on the job".

a) Did you grow up on a farm?
YES 89.8% NO 10.2%

b) How many years have you farmed with:

Your father	60.8 %	av. 14.2 years	Others	12.4%	av/ 5.6 years
Other relatives	28.8 %	av. 12.9 years	On your own	76.6%	av. 19.8 years

c) Have you ever worked/farmed in another location?
YES 39.8% NO 60.2%
If YES, where? *28.7% had worked elsewhere; of these, 36% had worked outside Alberta.*

d) What is the ethnic heritage which your family most strongly identifies with?
British - 39%; Scandanavia - 14%; East European - 13%; American - 12%; Ukrainian - 10%; Canadian and Other - 12%.

e) What proportion of your family now live: (include your brothers and sisters as well as your spouse and children).

(i)	on farms	46.2%	In	(iv)	Alberta	66.1%
(ii)	in rural villages/towns	21.7%		(v)	Prairie Provinces	8.0%
(iii)	in cities	31.8%		(vi)	Canada	15.8%
	TOTAL	100.0%		(vii)	Elsewhere	9.9%
					TOTAL	100.0%

9. At which educational level did you complete formal schooling?

Elementary	- Grades 1 - 5	3.1%	29.3%	Some agricultural/technical college courses	15.0%	16.0%
	- Grades 6 - 8	30.2%		Agricultural/technical college diploma	%	
Secondary	- Grades 9 - 10	22.6%		Some University courses	5.0%	9.3%
	- Grade 11	11.6%	60.2%	University degree	4.3%	
	- Grades 12 - 13	28.1%		TOTAL	100.0%	

10. In which age group are you?

Under 25	3.0%	35 - 44	21.6%	55 - 64	18.2%
25 - 34	25.7%	45 - 54	31.3%	65 and over	9.1%

11. How much longer do you intend to farm? *av. 18.1* years. Why? *1) Enjoys farming; independant - 47%*
2) Varies as to health; retirement plan - 31%.
3) Financially insecure; present market structure - 10%

12. Would you be willing to expand your operation in the future if the opportunity arose?
YES 60.7% NO 39.3%
Why? *1) More profitable; stability; children - 48%*
Why not? *2) All that can be managed by farmer - 22%*
3) Leaving farming - 12%
4) Present market structure - 8%

Please answer all of this section if you OWNED land in 1973-74.

1. How was your land owned?
   a) by husband 41.9 %
   b) by husband and wife 38.9 %
   c) by single person (e.g. widow) 8.1%
   d) by joint ownership, with other than spouse 8.5%
   e) other (please specify) 2.6%
   TOTAL 100.0%

2. How did you come to have ownership of this land?
   a) homestead 7.9 %
   b) purchase from relatives 20.1 %
   c) purchase from others 50.3 %
   d) inheritance/gift 13.3%
   e) other (please specify) 8.4%
   TOTAL 100.0%

3. Would it have been possible to rent the land you last purchased?
   Doesn't apply 19.0 % YES 11.9% NO 61.6% Don't know 7.5 %

4. Of the land you own, what acreage is used for:
   a) crops ____
   b) summerfallow ____
   c) improved pasture ____ 50.3%
   d) unimproved pasture ____ 43.0%
   e) woodland 6.7%

5. Do you farm any detached parcels of land from your main farmstead?
   YES 48.6 % NO 51.4 %
   If YES, how far away are they? 1) 0-5 mi.-66.6%, 2) 6-10 mi.-17.7%, 3) 11-25 mi.-10.5%, 4) plus 25 mi.-51%.
   Is the land use of these sections of land different from the use on main farmstead?
   YES 21.8 % NO 78.1%
   If YES, why? 1. Suited for pasture/hay (17) 2. Different soil type (4) 3. Access problem (4)
   4. Area is irrigated (2).

6. Do you rent any land to other farmers?
   YES 9.0 % NO 91.0%
   If YES, what is the land use?

   LAND USE

Crops	76.1%
Pasture	22.4%
Woodland	1.4%

   Does your lessee farm the land as well or as efficiently as you would? YES 80.7% NO 19.3 %
   Why? 1. Plan operation together (3)
   Why not? 1. No use of fertilizer (2) 2. Not knowledgeable about the area (2).

Please answer this section if you are farming RENTED land this year (1974).

1. What type(s) of land lease(s) do you have? How long have you held these lease(s)? What is the length of the present lease? Please fill in the appropriate columns.

TYPE OF LEASE	NO. OF ACRES	NO. OF YEARS HELD	NO. OF YEARS OF PRESENT LEASE	% OF TOTAL
Private Cultivated Land	....	....	....	58.0
Public Cultivated Land	....	....	....	6.3
Private Grazing	....	....	....	10.1
Pasture	....	....	....	13.3
Hay	....	....	....	8.3
Water Rights	....	....	....	2.3
Public Grazing	....	....	....	2.8

2. Are the lease agreement(s) written or verbal? How is the rent paid? Please check the appropriate columns.

TYPE OF LEASE	AGREEMENT		TYPE OF RENT/SHARE						
			Crop Share				Cash		Combination
	Written	Verbal	1/3-2/3	40-60	1/4-3/4	Other	Straight	Flexible	Crop & Cash
Private Cultivated Land									
Public Cultivated Land									
Private Grazing									
Pasture									
Hay									
Water Rights									
Public Grazing									
	55.4%	44.6%	36.6%	.8%	1.4%	6.6%	45.7%	6.6%	5.3%

SECTION "D" (continued)

3. Was there sharing of expenses? (Please write in type of lease.) If you have more than three types of leases, please write in the most important ones to your farm operation.

	TYPE OF LEASE			
Taxes ..... your share e.g. 1/3, 1/2	YES 12.8%	NO 87.2 %		
Fertilizer ..... your share	YES 38.1%	NO 61.9 %		
Machinery & Equipment ..... your share	YES 23.0%	NO 77.0 %		
Fencing ..... your share	YES 21.0%	NO 79.0 %		
Seed ..... your share	YES 27.0%	NO 73.0 %		
Weed Spray ..... your share	YES 29.0%	NO 71.0 %		
Other (Please specify) _____ your share	YES 9.0%	NO 91.0 %		

4. Would the sharing of costs have any effect on how you farmed the rented land? YES 16.7% NO 83.3 %
If YES, what would you do differently? 1. More use of fertilizer (17) 2. More use of herbicides (8)
3. Do fencing(4) 4.Do land improvements (e.g. clearing, breaking, levelling) (4)

5. Is there provision for lease renewal(s)? YES 61.4 % NO 38.6%
Is there provision for adjustment of the rent or share during the lease? YES 20.6% NO 79.4%
If YES, how is the adjustment determined? 1. By price of grain/beef (7) 2. By mutual agreement (2)
3. Option to purchase (2)

6. This year, are you farming the rented land in the same manner as the land which you own?

Summerfallow	YES 86.9%	NO 13.1%		Weed Spray	YES 90.5%	NO 9.5 %
Fertilizer	YES 86.9%	NO 13.1%		Type of Crop	YES 90.9%	NO 9.1 %

Please indicate why there are differences.

7. What kind of rent do you prefer?

Straight Cash 39.1 %	Crop-Share 49.6%	Combination of Cash & Share 3.6 %	
Flexible Cash 7.3 %	Livestock Share .4%		
Why? 1) No arguments about bookkeeping or crop type	1) Share profit or loss		
2) Freedom to do as please	2) Less risk for tenant		
3) Convenient	3) Less complicated		
4) Flexible Cash-reflects market prices			

SECTION "D" (continued)

8. What length of lease(s) would you prefer?

Short-term - 1 year	6.5 %	Intermediate - 5 - 10 years	28.6 %	Long-term - greater than 10 years	26.6 %
- 1 - 5 years	38.4 %				

Why? 1. Allows for changes in terms, 2. Know costs. | 1. Can plan further ahead. 2. Security. | 1. Can receive benefits from improvements.

9. What information or whose advice do you seek out prior to making a lease agreement?

None	37.8 %	District Agriculturist/Government Personnel	11.6 %	Lawyer	5.6 %
Family	17.3 %	Agricultural Consultant	2.8 %	Accountant	2.0 %
Neighbour	8.8 %	Newspaper/Magazine/Textbook	15.2 %	Government Publication	.9 %

10. How did you choose this type of agreement?

Your Request	23.7 %	Negotiation	30.6 %	Professional Advice	4.0 %
Owner's Request	32.0 %	Typical in District	15.7 %		

11. Your main landlord? *Private individual-59.9%; Government-24.9%; Company-15.3%.*

a) How long have you known him? Lifetime 48.6 % Number of years 1-5 yrs.-14.0%; 6-10 yrs.-10.7%; +10 yrs.-28.7%

b) Are you related to the owner? YES 35.7 % NO 64.3 %
If YES, what relation? *Father-Son - 44.5%; Father/Mother-in-Law - 21.1%; Brother/Brother-in-Law - 21.1%; Uncle/Aunt-10.6%; Other-2.4%*

c) Did he ever farm the land you rent? Don't know 14.3 % YES 50.8 % NO 34.9 %

d) How many farmers rent from him? Number of farmers 1 - 78.6%; 2 - 13.8%; More than 2 - 7.6%

e) Has he ever backed a loan/given credit to you? YES 18.9 % NO 81.1 %

f) Where does the landlord live? On a farm 12.3 % In rural village/town 26.1 %
In a rural area 3.8 % In the city 38.7 %

g) How far away is that from the rented property? *Less than 1 mile - 34.7%; 1-99 miles - 48.1%; 100-199 miles - 2.8%; more than 200 miles - 14.4%*

SECTION "E"

Please answer this section regardless of whether you owned or rented land.

1. What are your recommendations for easing the present shortage and/or high cost of agricultural land today?

1. Restrict use of agricultural land to farmers/control subdivision - 38%. 2. Not a problem - 11%.
3. Need market stability for farm products/better prices - 10%. 4. Rural development programme needed - 9%
5. Restrict credit/control inflation - 9%. 6. Allow greater sale of crown land to farmers - 6 %.
7. Because of high market value of land, need easier credit terms - 5%. 8. Abolish Hutterite colonies - 5%
9. Need land banks - 4%. 10. End government "interference" - 3%.

Dear Sir/Madam:

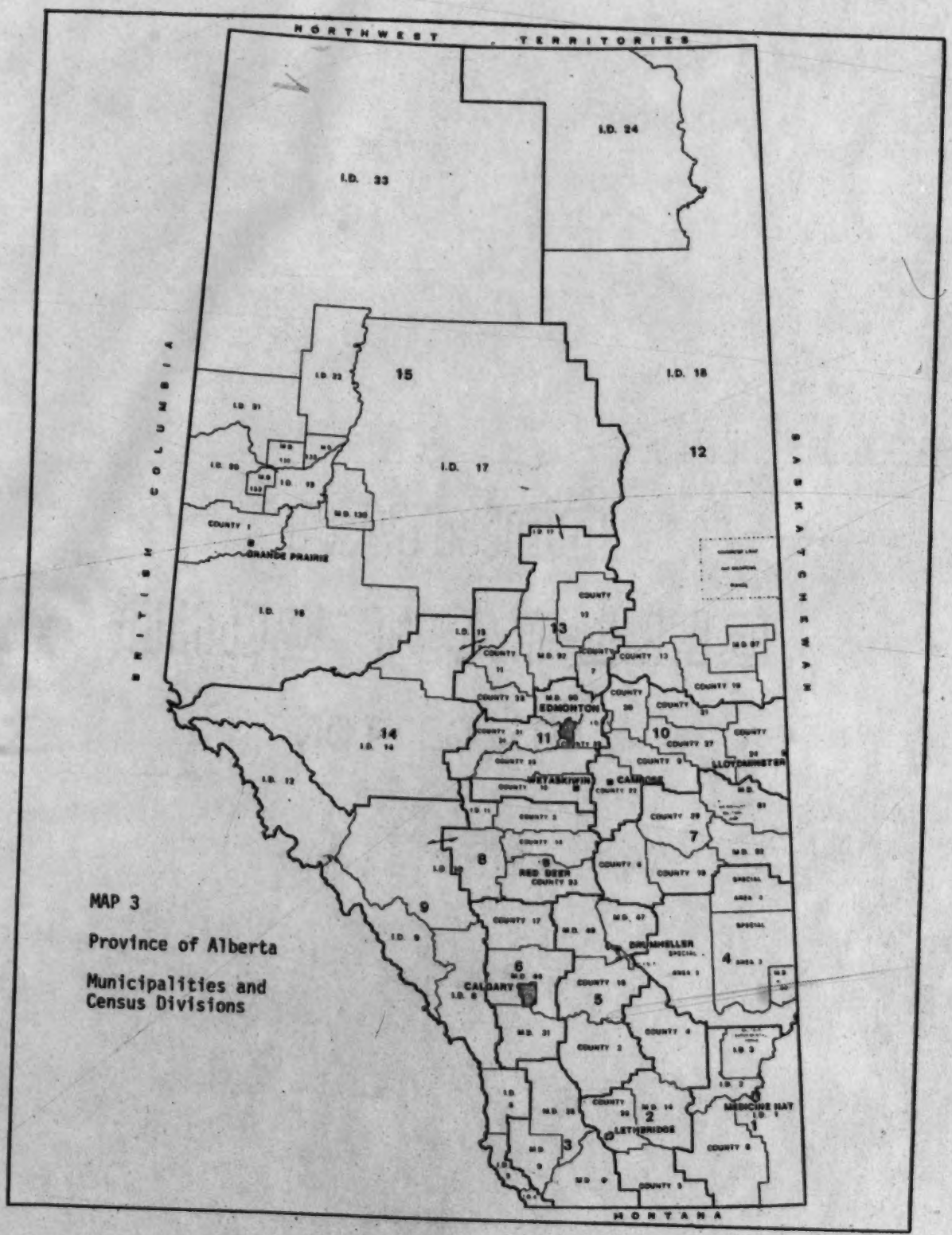
A short time ago, a survey questionnaire on rural land tenure was mailed to you.

If you have replied, THANK YOU.

If you have not, please do so TODAY. Your attitudes and answers on land tenure are necessary for the successful completion of the report. Thank you.

D. M. Boylen,

Resource Economics Branch



MAP 3

Province of Alberta

Municipalities and Census Divisions

FACTOR SCORE COEFFICIENT MATRIX

Variable	Factor 1	Factor 2	Factor 3
1	-0.535014	-0.347110	-0.023954
2	0.214464	0.302950	-0.106584
3	-0.409579	-0.317009	-0.187107
4	0.120667	0.185268	-0.027055
5	0.072036	-0.023918	-1.091097
6	-0.131127	0.002133	0.472271
7	0.104308	0.058281	-0.838014
8	-0.250189	-0.159096	0.124951
9	0.154575	0.251537	0.070725
10	-0.253639	-0.119370	0.372196
11	-0.303341	-0.161121	0.464581
12	0.101525	0.074808	-0.637467
13	0.139857	0.295242	0.424729
14	-0.372369	-0.245230	0.089748
15	0.225113	0.449260	0.676938
16	0.383808	0.544112	0.148100

VITA

NAME: Diana Mary Boylen

PLACE OF BIRTH: Toronto, Ontario

YEAR OF BIRTH: 1947

POST-SECONDARY EDUCATION AND DEGREES:

York University
Toronto, Ontario
1965-1970 B.A.(HON)

York University
Toronto, Ontario
1970-1971

University of Alberta
Edmonton, Alberta
1971-1976

HONOURS AND AWARDS:

Province of Ontario Graduate Fellowship
York University
1970-1971, 1971

WORK EXPERIENCE:

Tutorial Leader
York University
1970-1971

Project Manager
Farm Management Branch
Alberta Department of Agriculture
1971-1972

Agricultural Manpower Specialist
Agricultural Services Branch
Alberta Agriculture
1972-1974

Resource Economist
Resource Economics Branch
Alberta Agriculture
1974-1976

PUBLICATIONS:

(1) (Boylen, D.M. and Brook, D.P.) Checklist of Flora and Fauna of Tiny Marsh. Toronto: Fish and Wildlife Branch, Ontario Department of Lands and Forests, 1970.

(2) Boylen, D.M. "Macro-Vegetation and Pollen Studies." Palaeoecology and Ontario Prehistory. Edited by W.M. Hurley and C.E. Heidenreich. Research Report 1. Toronto: Department of Anthropology, University of Toronto, 1969.

(3) Lapp, D. (Boylen, D.M.) "Vegetation and Pollen Analysis from Parize Marsh." Palaeoecology and Ontario Prehistory. Edited by W.M. Hurley and C.E. Heidenreich. Research Report 2. Toronto: Department of Anthropology, University of Toronto, 1970.

(4) Clarke, D.; Hills, P.; Lapp, D. (Boylen, D.M.); Lundeen, R.; Morley, D.; and Silzer, V. A Study of the Character, Activities and Images of Visitors to Toronto. Toronto: Department of Geography, York University, 1971.

(5) Lapp, D. (Boylen, D.M.), ed. Farm Management for Native Peoples. Edmonton: Economics Division, Alberta Department of Agriculture, 1972.

(6) Lapp, D.M. (Boylen, D.M.) The Critical Farm Labour Situation - Its Causes and Solutions. Edmonton: Rural Education and Development Association, 1974.

(7) Lapp, D.M. (Boylen, D.M.) Survey of Labour and Training Requirements for Seed Cleaning Plant Personnel. Edmonton: Agricultural Services Branch, Alberta Agriculture, 1974.

(8) Lapp, D.M. (Boylen, D.M.) Structure of Alberta Farms. Edmonton: Alberta Land Use Forum, 1974

(9) Boylen, D.M. Rural Land Tenure. Edmonton: Alberta Land Use Forum, 1974.

(10) Boylen, D.M. Land Banks. Edmonton: Rural Education and Development Association, 1975.

(11) McAfee, G.; Ford, A.; and Boylen, D.M. Agricultural Leasing. Edmonton: Farm Management Branch, Alberta Agriculture, 1975.